DOCUMENT RESUME

ED 258 396 EC 172 916

AUTHOR	Clark, Thomas C.; Watkins, Susan
TITLE	The SKI*HI Model: Programming for Hearing Impaired Infants through Home Intervention, Home Visit Curriculum. Fourth Edition.
INSTITUTION	Utah State Univ., Logan. Dept. of Communicative Disorders.
SPONS AGENCY	Special Education Programs (ED/OSERS), Washington, DC. Handicapped Children's Early Education Program.
PUB DATE	Jan 85
NOTE	553p.; For Third Edition, see ED 162 451.
AVAILABLE FROM	SKI*HI Institute, Department of Communicative Disorders, UMC 10, Utah State University, Logan, UT 84322 ($35.00).
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF02 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Auditory Training; Communication Skills; Curriculum; *Handicap Identification; Hearing Aids; *Hearing Impairments; *Home Programs; *Home Visits; Infants; Language Acquisition; Young Children
IDENTIFIERS	SKI HI Home Visit Curriculum

ABSTRACT

The manual describes the SKI*HI Model, a comprehensive approach to identification and home intervention treatment of hearing impaired children and their families. The model features home programing in four basic areas: the home hearing aid program (nine lessons which facilitate the proper fit and acceptance of amplification by the child), home communication program (ways to help parents develop essential communication skills and select an optimum language method), home auditory program (ways to promote use of residual hearing), and home language stimulation program. Information for parent advisors address the first home visits, psycho-emotional support for families, and home visit planning, delivery, and reporting. Home visit programs are examined in terms of lesson plans and sample activities for the subject areas of: hearing aids, home communication, home auditory programs, and home language stimulation programs (aural-oral and total communication). (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED258396

THE SKI*HI MODEL

Programming for Hearing Impaired Infants Through Home Intervention

Home Visit Curriculum

(Fourth Edition)

Thomas C. Clark, Ph.D.
and
Susan Watkins, Ed.D.

Department of Communicative Disorders
Utah State University, Logan, Utah

Contributors: Roselee McNamara, M.S.
Barbara Terry, M.S.
Sharla Vaughan, M.S.

Sue Morgan, B.S.; Dorothy Jensen, M.S.; E. Rosalie Reese, M.S.;
Thomas S. Johnson, Ph.D.; Gayle Schulman, Ph.D.

Funded by — U.S. Office of Education, Bureau of Education for the Handicapped,
Handicapped Children's Early Education Program, P.L. 91-230, Title IV, Part C

Copyright © 1985
SKI*HI Institute
Department of Communicative Disorders
Utah State University, Logan, Utah
All rights reserved. No portion of this book may be reproduced
in any form without written permission of the publisher.

EC172916

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
Susan Watkins
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Table of Contents

Introduction

Introduction and Overview of the SKI*HI Model 1
Use of the SKI*HI Manual 18

Information for Parent Advisors

Unit 1: Determining and Promoting Parent Readiness For Formal SKI*HI Lessons: The First Home Visits 21
Unit 2: Psycho-Emotional Support for Families 31
  Introduction 31
  Family Dynamics 32
  The Mourning Process 34
  Role of the Parent Advisor 39
  Assessing Parent Advisor Impact In the Home 47
  Determining the Needs of the Family 49
  Providing Emotional Support to Meet Family Needs 51
  Appendix I: Neurolinguistic Programming 57
Unit 3: Home Visit Planning, Delivery, and Reporting 61
  Planning the Home Visit 61
  Delivering the Home Visit 67
  Reporting: SKI*HI Assessment and Evaluation 70
  Parent Notebook 89

Home Visit Programs

Unit 4: Home Hearing Aid Program 159
  Introduction 159
  Lesson 1: Hearing For Language; Sound 163
  Lesson 2: Perception of Speech 167
  Lesson 3: Otological Care: Anatomy; Causes and Types of Hearing Losses 175
  Lesson 4: Measuring Hearing Loss; Preparation for Fitting 185
  Lesson 5: Parts and Functions of Aids; Putting on Aids; Selecting Aids 191
  Lesson 6: Daily Listening Check; Downs' Approach 201
  Lesson 7: Care of Aids; Troubleshooting 211

Lesson 8: Review; Maintaining Child's Hearing Aid 221
Lesson 9: "Sound Approach"; "Changing Sounds"; Competency Test .. 231
Appendix: Consumer Information; FM Systems; Earmolds and Tubing .. 235
Unit 5: Home Communication Program 243
Introduction 243
Assessment of Parent-Child Interaction 249
Information Lesson I: Importance of Communication Interaction 267
Information Lesson II: How An Infant Learns to Communicate 271
Information Lesson III: Signals Important For Communication 275
Information Lesson IV: Infant Communication: Why a Child Communicates 281
Information Lesson V: Infant Communication: How a Child Communicates 285
Information Lesson VI: Introduction to Aural-Oralism and Total Communication 289
Information Lesson VII: Evaluation for Aural-Oralism or Total Communication—1 293
Information Lesson VIII: Evaluation for Aural-Oralism or Total Communication—2 299
Information Lesson IX: Parent Communication: Motherese 317
Information Lesson X: Parent Communication: Interaction and Conversation 321
Information Lesson XI: Parent Communication: Reinforcement 325
Information Lesson XII: Communication Through Experience Pictures ... 329
Skill Lesson 1: Minimizing Background Noise 335
Skill Lesson 2: Encourage Child to Explore and Play 337
Skill Lesson 3: Serve As Communication Consultant 341
Skill Lesson 4: Use Interactive Turn-taking 345
Skill Lesson 5: Get Down on Child's Level 349
Skill Lesson 6: Maintain Eye Contact and Direct Conversation 351
Skill Lesson 7: Use Varied Facial Expressions 355
Skill Lesson 8: Use Intonation 359
Skill Lesson 9: Use Natural Gestures 361
Skill Lesson 10: Use Touch 363
Skill Lesson 11: Respond to Child's Cry 367
Skill Lesson 12: Stimulate Babbling 369
Skill Lesson 13: Identify and Respond to Communicative Intents 371

Skill Lesson 14: Use Conversational Turn-taking 375
Skill Lesson 15: Use Meaningful Conversation 379
Unit 6: Home Auditory Program 385
Introduction 385
Introduction to Phase I 399
Lesson 1: Attending to Environmental Sounds and Voice 401
Lesson 2: Attending to Distinct Speech Sounds 403
Lesson 3: Use of Auditory Clues; Showing Source of Sound and Reinforcement 407
Lesson 4: Identification of Responses to Sound 409
Lesson 5: Stimulation and Reinforcement of Vocalizations 411
Introduction to Phase II 415
Lesson 6: Recognition of Objects and Events 417
Lesson 7: Sound As First Source of Information 419
Lesson 8: Locating Sound Source in Space 421
Lesson 9: Reinforcement of Attempts to Localize 425
Lesson 10: Vocalization Varied In Duration, Intensity, and Pitch 427
Lesson 11: Tonally Expressive Speech 429
Lesson 12: Speech Breathing 431
Introduction to Phase III 435
Lesson 13: Locating At Increased Distances and Levels 437
Lesson 14: Reinforcement of Child's Speech Attempts; Vowel and Consonant Stimulation 441
Lesson 15: Stimulation with Meaningful Words 445
Introduction to Phase IV 447
Lesson 16: Discrimination and Comprehension of Environmental Sounds. 449
Lesson 17: Discrimination and Comprehension of Gross Vocal Sounds .. 453
Lesson 18: Discrimination and Comprehension of Words and Phrases ... 457
Lesson 19: Discrimination and Comprehension of Fine Speech – Vowels . 461
Lesson 20: Discrimination and Comprehension of Fine Speech – Consonants 465
Auditory Activities 469
Unit 7: Home Language Stimulation Program 519
Introduction 519
Home Language Stimulation Program: Aural-Oral 523
Lesson 1: Use Conversation In Four Language Areas 525
Lesson 2: Select Appropriate Target Words and Phrases 529

Lesson 3: Increase Use of Target Words and Phrases 535
Lesson 4: Reinforce Child's Expressive Language 537
Lesson 5: Expand Child's Language Attempts 543
Lesson 6: Maintain Naturalness 547
Language Activities and Experiences Supplement 549
Home Language Stimulation Program: Total Communication 559
Lesson 1: Overview 563
Lesson 2: Development of Total Communication: Gestures and Baby Signing 567
Lesson 3: Development of Total Communication: True Signing 575
Lesson 4: Developing a Basic Signing Vocabulary: Simplicity 585
Lesson 5: Developing a Basic Signing Vocabulary: Emphasis 595
Lesson 6: Developing a Basic Signing Vocabulary: Reinforcement 601
Lesson 7: Signing Consistently: Communicating Directly to the Child ... 607
Lesson 8: Signing Consistently: Signing the Home Visit 617
Lesson 9: Signing Consistently: Background Conversation 623
Lesson 10: Using Effective Total Communication in the Home 633

ACKNOWLEDGMENTS

The editors would like to acknowledge the support and assistance of the many people who have directly and indirectly contributed to the development of the SKI*HI Model and to this manual.

The parent advisors and staff members of the Demonstration Project at the Utah School for the Deaf assisted in the formulation of the model and the first edition of the manual. Staff of the Utah State Division of Health, Speech Pathology-Audiology section provided assistance and made a major contribution to the SKI*HI Model through development of the Utah High Risk Screening Program. The Utah School for the Deaf teachers and administrators were supportive during the development and implementation of the model.

Parent advisors, supervisors, administrators and supportive staff in SKI*HI adoption programs throughout the United States have provided ideas, field testing, and operational input to the SKI*HI Model and this new edition of the manual.

This fourth edition is a result of the work of a great many people throughout the United States who have used and are using the SKI*HI Model to serve the families of hearing impaired children. The editors gratefully acknowledge their contributions and believe this manual represents the optimum state of the art in home intervention for hearing impaired infants because it represents the best ideas and practices from a large number of professionals in the field.

THE SKI*HI MODEL

Programming for Hearing Impaired Infants Through Home Intervention

Introduction and Overview of the Ski*Hi Model

The SKI*HI Model was conceived and developed as a comprehensive model for the identification and home intervention treatment of hearing impaired children and their families. The model is now used throughout the United States and several foreign countries. This model is currently used with about 2,000 hearing impaired infants and young children annually.

This introduction will describe the background, rationale, and the components of the model. The purpose of this introduction is to provide a holistic view of the model. The successful implementation and use of this program is highly correlated to the use of the whole model, not the use of isolated components.

Background

Traditionally, education of the deaf, like other educational programs, has been based on a classical schoolroom teacher-pupil approach. Children have been placed in classrooms and teachers have taught them the classical subject matter lessons. This method has had modest success with children who have no handicapping conditions. However, it has not worked well at all with deaf children.

Data from the 1969 Demographic studies for the Deaf,Office of Demographic Studies, Gallaudet College, indicates that the average deaf child in the United States progresses less than two months per year in language and reading. In an attempt to improve this situation, educators of the deaf were among the first to move into preschool education. Center-based and residential preschools were established.

Studies on the long-term effects of center-based and residential preschool programs on young hearing impaired children are inconclusive. Research done primarily during the 1960's did not yield conclusive evidence for positive sustained impact of preschool intervention. Craig (1964) administered comprehensive batteries of speechreading and reading tests to 151 children at the Western Pennsylvania School for the Deaf and the American School for the Deaf (Connecticut) who had attended preschool earlier in their lives. He also tested a control group of 101 children from the same institutions who had not attended preschool. He found no statistically significant differences between the experimental and control groups after the children had been in the primary grade for 3 to 4 years. Similar results were found by Phillips (1963) who tested 9 year old severely and profoundly hearing impaired children from eastern United States schools for the deaf including the Lexington School (New York) and the American School for the Deaf (Connecticut). No statistically significant differences between the experimental preschool group and the control no-preschool group were found on measures of arithmetic achievement, language achievement, and socialization.

Vernon and Koh (1970) compared children who had experienced three years of oral preschool (John Tracy Preschool Program) to children with no preschool who had (a) oral home environments and (b) manual communication home environments. Groups were matched on age, IQ, and number (23 subjects in the experimental group and 23 subjects in each of the two control groups). Participation in preschool did not seem to be the determining factor of later academic achievement advantages. At age 18, children who experienced an oral preschool program did not score statistically significantly higher than the no-preschool children from oral home environments on the Stanford Achievement Test. However, the experimental preschool children scored statistically significantly lower than the no-preschool children from manual communication home environments on the Stanford sub-test of paragraph meaning and reading.

Balow and Brill (1975) did a follow-up study of the Vernon and Koh research. They studied 264 John Tracy Preschool Program graduates who were attending the California School for the Deaf at Riverside. This sample was larger than the 23 subjects used in the Vernon and Koh study. The Tracy graduates were compared to other students at the Riverside School who had not had preschool programming. The John Tracy graduates scored statistically signficantly higher on the Weschler Adult Intelligence Scale and on the total battery of the Stanford Achievement Test than the control group. An analysis of covariance (ANCOVA) showed that a statistically significant difference in achievement remained when the effects of IQ were controlled.

The discrepancy between the Vernon and Koh (1970) study and the Balow and Brill (1975) study could be attributed to the use of large samples and a more efficient research design (ANCOVA) by Balow and Brill. Larger samples and efficient designs (such as ANCOVA) add more power to a study and increase the likelihood of rejecting the null hypothesis in favor of the research hypothesis (which in this case is the differential performance of preschool and no-preschool children).

Moores, Weiss and Goodwin (1978) conducted a 6-year longitudinal study on preschool programs for deaf children. Subjects included children who had attended seven different preschools which emphasized different communication methodologies. The experimental children were shown to have almost identical scores to hearing control children on the Illinois Test of Psycholinguistic Abilities and the reading sub-test of the Metropolitan Achievement Test Primer Battery. However, communication success as measured by the Receptive Communication Scale (a tool developed by the research team) depended on the type of preschool program in which the children had participated. Children scored highest who had been in speechreading and signing preschool programs. These children were followed by those who had experienced speech and fingerspelling preschool programs; these were followed by children who had been in preschool programs utilizing speech and audition. Children scored lowest who had been in programs utilizing auditory receptive communication only.

In summary, the limited research available on long-term effects of center-based preschool programming for hearing impaired children seems inconclusive. Even though center-based preschools and nurseries may have some possible long-term effects on hearing impaired children, this delivery method may not be completely adequate for this population.

Simmons-Martin, Horton, Northcutt and others took the first step out of the classroom when they developed home demonstration programs on the campuses of schools for the deaf. These demonstration homes attempted to create a homelike atmosphere where parents could come and be involved with their children.

Studies done on the long-term impact of demonstration home programs for parents of young hearing impaired children indicate children whose parents have been in these programs show greater language competence and academic achievement in the first few primary grades than children whose parents have not participated in such programs.

The authors of the SKI*HI Model (Clark and Watkins, 1978) concluded that programming for deaf children had to begin as close to birth as possible, had to treat the hearing disorder and provide a model of language development in the home for the parents and child. Watkins (1971) did a comprehensive survey of infant hearing impaired programs in the United States. She was able to find only two programs that were home intervention (home visit) programs. She used a questionnaire type research to develop her Guidelines for a Model Hearing Impaired Infant Program. She received completed questionnaires from 26 professionals who were involved in infant hearing impaired programs. Ninety-six percent of the respondents answered that ideally a *home visit program* should be used for promoting language development in hearing impaired infants. It is interesting to note, however, that only two of these programs were actually using home intervention.

Watkins (1971) summarized the responses of the participants and developed Guidelines for a Model Hearing Impaired Infant Program. She stated that a home visit program and demonstration home program were the most preferred models of delivery of services. She outlined such procedures as age requirements, payment for services and acceptance of multi-handicapped children. The respondents indicated that parents should be the targets of training, that hearing aids and molds and audiological testing should be provided by the program and that one home visit per week should be made.

Rationale for Early Home Intervention With Hearing Impaired Children

Several authors have described the effects that language deprivation has on the acquisition of receptive and expressive verbal language. Ewing (1963) reports on a comparison of the receptive and expressive language development of young deaf children as indicated by the Watson-Pickles Scale, with the development of normal children as reflected on the Gessel Language Development Scale. The study shows the 10 best deaf children to be retarded from 5 to 33 months in receptive language development during the second to fifth years of life and from 4 to 27 months retarded in expressive language development during the same time period. Northcott (1966) discusses the effect language deprivation has on speech development. She states that the hearing impaired child, after reaching the stage of random vocalizations, becomes silent since he has no language to imitate. The subsequent stages of speech development are then delayed or do not naturally develop at all. Tervoort as cited by Simmons (1967) comments on the expressive language development of language deprived children:

> If the deaf child is left by himself there is no adaption to the world around of the speech sounds, and therefore, no extensive training of all possible phoneme combinations prior to their symbolic usage as words. Consequently, there is no single word phase, no morphological and syntactical refinement; in short: no language learning. (p. 3)

Because of the profound language delay and disorder caused by hearing loss and the apparent ineffectiveness of later school experiences in developing language in deaf children, many professionals have looked at the area of early intervention. The idea of a critical period for language development also places great emphasis on very early intervention.

There is evidence in the literature that there is a critical period for language acquisition in the life of every child. It is during the first few years of a child's life that language appears so rapidly and effortlessly. Researchers have studied this critical period and some have indicated the actual ages of the child during this time.

McNeill (1966) states:

> The fundamental problem to which we address ourselves in language acquisition by normal children is the simple fact that the process occurs in a suprisingly short period of time. Grammatical speech does not begin before 1.5 years of age; yet as far as we can tell, acquisition is virtually complete by 3.5 or 4 years. Thus a basis for the rich and intricate competence of adult grammar . . . must emerge in the short span of 24 to 30 months. (p. 120)

That language is acquired during the first few years of life is supported by Lenneberg (1967). He terms this stage of development as behavorial resonance and defines it as the time when a child, after being exposed to the language of his social surroundings, suddenly responds to the stimuli and vocalizes in meaningful ways. The process is confined to the years just preceding the physical maturity of the brain when the nervous system is plastic and the cognitive processes are unfolding. "An individual may outgrow the capacity for the acquisition of language," reports Lenneberg (1967, p. 1337). Levine (1960) and Meadow (1968) believe that if language is not developed during the early years of a child's life, little more than remedial work can be done since language will never develop spontaneously. McCroskey (1967), Simmons (1967), and Downs (1967) maintain that the capacity for language acquisition occurs only once in the early years of life.

Several writers stress the importance of early intervention with hearing impaired infants because of this optimal or critical language development period. Streng (1967) feels that the capacity to acquire language may be transitory, and reach a peak around the ages two to four. She states:

> If this is true, it leaves us in a rather hopeless situation unless language learning is seriously begun in the home before the age of two . . . the greater the delay in learning to communicate, the greater the delay in the more formal

> aspects of education and the more difficult is the task for both teacher and child. (p. 128)

Bricker and Bricker (1974) write that

> The infant and prelinguistic child are not simply sitting around listening to well formed sentences. They are exploring their environment and synthesizing a sensorimotor account of it all. Consequently, an early intervention program in language should begin during early infancy rather than in the middle of the second year of life. (p. 432)

Berg (1976) refers to the 1971 Simmons study which suggested why special assistance should be provided to hearing impaired children from infancy. She noted that it is during the first years of life that language learning ordinarily advances rapidly. She also indicated that language is inextricably linked with auditory experiences. Simmons concluded that delayed identification of hearing loss and delayed utilization of residual hearing prolong the time it takes a child to progress through the various stages of language development.

McCroskey (1967) supports an early language training program for hearing impaired infants because: (1) Humans have a predisposition to language; (2) early sensory input provides the material necessary for the infant to internally organize language; (3) the child learns how to monitor and control his language if he is given early feedback; and (4) the social, emotional, and intellectual growth of the child are proportional to the child's ability to relate to others and therefore are contingent on early language training.

An area of critical need that can best be met by early intervention is the need of parents of handicapped children for services and for psychological and emotional support.

The first reaction to finding that a child has a handicapping problem is generally distress. Ehlers (1966) found that the mothers of retarded children typically reported being shocked and disbelieving when their child's condition was first confirmed.

The very identification or labeling of a person in the role of parent of a handicapped child nearly always comes as an unpleasant surprise. The expected perfect child, as pointed out by Schlesinger and Meadow (1972), is an anticipated gift to the family. If the child fails to be perfect, conflicts arise even in the best adjusted parents. The very presence of a handicap means that the parents' hopes and dreams have not been fully realized.

Even the birth of a normal child is a potential life crisis. The life style of family members is almost always changed creating a readjustment of roles within the family. The child to be is usually idealized as one who will meet or surpass his parents' achievements. He is generally perceived as giving pleasure (Schlesinger and Meadow, 1976). They contend that if the child is not perfect, latent conflicts are revived for his parents (Schlesinger and Meadow, 1976).

> During the process of suspecting, recognizing, and identifying a handicap, it would appear that the following emotions are common among parents: shock, bewilderment, sorrow, guilt and anxiety. (p. 36)

Klaus and Kennell (1976) describe the stages that parents go through in reaction to having a handicapped child. The stages they give are (1) shock, (2) disbelief (denial), (3) sadness, anger and anxiety, (4) equilibrium and (5) reorganization. The amount of time that a parent needs to deal with the issues of a specific stage varies, but the sequence reflects the natural course of most parental reactions to their malformed infant.

Optimally, educational intervention will occur early in the life span of the exceptional child. Professionals should meet the parents shortly after the disclosure of the diagnosis (Schlesinger and Meadow, 1976). They state that the professional may be ready and eager to initiate education or therapy while the parent is still dealing with the impact of the diagnosis and his contact with the experts.

Klaus and Kennell, (1976) say that:

> Involving the parents in the care and planning for their infant allows them to enjoy satisfying feedback from him. It is also at this early stage that the groundwork is laid for an effective alliance of parents and professionals concerning treatment. (p. 117)

The rationale for early home intervention is a strong one. The handicap of deafness imposes acute to profound language delay. These disorders have not responded well to later educational programming. From the body of early language development research and writing, there is a convincing theory that there exists an optimal if not a critical period for language development, i.e., from birth to five years of age. Language intervention for hearing impaired children, therefore, must begin as soon after birth as possible. It should occur in the home setting with parent and family involvement. Early home intervention can provide the psychological and emotional support that parents of a handicapped child need.

The philosophy and thus the home program for hearing impaired infants and children are therefore built on the following concepts: (1) Language programming and intervention for the hearing impaired child must begin as close to birth as possible. (2) The hearing disorder must be treated immediately. This treatment is in the form of amplification. Medical treatment is given where applicable. If the child with a hearing disorder does not respond to the treatment of amplification, then the communicative disorder is treated through an added visual system, total communication. (3) The language program should follow the sequence of the natural language universals. (4) The language program must be in the home and the parents are the target population which will execute the language program and bring about the language growth of the child. (5) The teacher's (parent advisor's) role is to teach the parent through modeling and instruction. (6) A child with a hearing disorder must be taught to use and develop his residual hearing. (7) A language development program for a hearing impaired infant or child should not be structured. (8) A home program should provide psychological and emotional support for parents of handicapped children.

Development of the SKI*HI Model

The Ski*Hi Model was originally developed through an Office of Special Education, Handicapped Children's Early Education Program (HCEEP) Demonstration Model Grant from 1972 to 1975. During the demonstration phase, staff members visited programs for young hearing impaired children throughout the United States. Consultants were used to develop the basic programs. Staff members researched early language and communication. An experimental model was developed and evaluated for one and a half years. After evaluation and extensive field testing and revisions, the SKI*HI Model became a reality in 1975. Upon completion of the three-year model program in 1975, the model program became the Utah Parent Infant Program and SKI*HI became a HCEEP Outreach Model.

Project SKI*HI Outreach refined the SKI*HI Model and took the necessary steps to have it validated as an exemplary educational program. SKI*HI became a member of the National Diffusion Network and has now been adopted by more than 140 agencies throughout the United States and Canada. Approximately 2,000 children and their families receive home intervention services annually.

In 1981, Project INSITE was funded as a HCEEP Demonstration Model for home intervention services for multi-handicapped sensory impaired children.

INSITE — IN Home Sensory Impaired Training & Education

The INSITE Model uses the basic SKI*HI Model and concept of services to parents in the home. However, INSITE has developed a curriculum for multi-handicapped deaf children, multi-handicapped blind children and deaf-blind children. The INSITE Model was funded as an HCEEP Outreach Model.

Project INTERVENTION was funded in 1983 as an OSE innovative program for severely handicapped children. The INTERVENER Model provides a different type of service in the home of severely multi-handicapped sensory impaired (MHSI) children. This model builds on the SKI*HI Model and INSITE Model but provides direct service to the MHSI child and family. The Intervener is a non-professional person who provides direct daily service to the child and family under the direction of the parent advisor.

Basic Educational and Philosophical Underpinnings of the SKI*HI Model

1. The hearing impaired child must be identified as close to birth as possible. Therefore, the model of delivery of services must include a hearing screening-identification system. This screening method must be at birth and in hospitals in order to screen all children. There must be an active public awareness program and an effective referral system. All hearing impaired children should be identified by at least one year of age.

2. The child's hearing disorder must be treated with binaural amplification at the earliest possible time. The child should be fit with trial amplification within one month of identification.

3. In order to provide optimum amplification for hearing impaired infants, a team auditory-hearing aid management system must be employed. The audiologists, parents, and parent advisors must work together in order to select the optimal hearing aid and effect the best fitting possible. A hearing aid trial system must be available for optimal fitting of the infant.

4. Binaural, ear level amplification has been demonstrated to be best for most hearing impaired infants in home intervention programs.

5. The home based parent advisor model is founded on the principle of assisting the parents to effectively parent their hearing impaired child. The parent advisor teaches, models and advises the parent. She does not work directly with the child. The only time the parent advisor works with the child is to model an activity for the parent. The best frequency for home visits is weekly. The average duration of the home visit is approximately one hour.

6. The SKI*HI Model is based on an ecological model. This model treats the child and the environment in which he lives.

7. The parents must be taught and assisted in understanding and managing hearing aids.

8. The parents must teach and assist their hearing impaired child in using his hearing. A planned auditory program is necessary for the child to develop his auditory potential.

9. The SKI*HI Model is based on the pragmatic language approach. The child is a dynamic partner in a two-way communication system. The child has intentions to be expressed through gestures, facial expressions and vocalizations. If parents are taught to be sensitive to these expressed intentions and respond to them, the hearing impaired child will develop a communicative system. The child and parents must develop a communication system before a language system can develop. Therefore, the parents need a model of how to develop a pragmatic communicative system with their child when he is still very young.

10. Some hearing impaired children can and will develop an effective communicative language system through amplified hearing. However, many hearing impaired children must have a maximum visual system plus amplification to develop an effective communicative/language system. Thus, the parent infant program must provide both an auditory approach and a total communication approach in order for all children to develop maximum language systems. It is the responsibility of the parent infant program to evaluate the child and family for the appropriate communication approach. The program must not bias the parents toward one communicative method but assist them in knowing and choosing the best approach for each child and family.

11. The parent infant program should provide the necessary resources in the home to make the program effective for the family. The program should provide a hearing aid trial system, a hearing aid loaner bank, hearing aid molds at minimum cost, library materials and a system for learning total communication. The parents should not have to leave the home to obtain these services.

12. Parents should have a model as to how they can use the everyday activities in the home to develop language in their child. Parents should not be expected to become teachers or behavioral engineers. They should be able to continue with their family functions using an unobtrusive, effective communication system to build an effective language system.

13. The parent advisor needs to understand the dynamics of the family she serves and be supportive.

14. The parent infant program should provide necessary supportive programs to the family.

Part of these underpinnings constituted the basic foundation of the original SKI*HI Model and the philosophy upon which the program was developed. Some of these basic philosophies have developed and formalized as the program has matured.

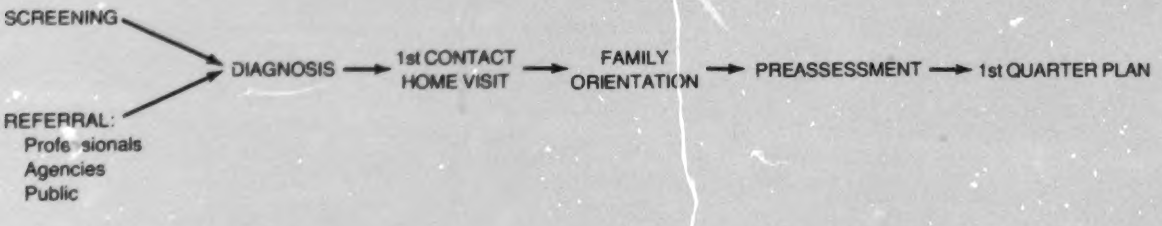
The SKI*HI Model

The SKI*HI Model is a comprehensive home intervention program for hearing impaired infants and families. It is based on the rationale and basic educational, developmental, and philosophical underpinnings previously stated. It is the result of twelve years of research, development and experience. It is a proven model being used with 2,000 hearing impaired infants and young children annually. It has found acceptance by over 140 agencies which have adopted the SKI*HI Model.

This discussion is a brief overview of the model and is intended only as an introduction. The working SKI*HI Curriculum is found in Clark and Watkins (1985), the SKI*HI Curriculum Manual, which contains the full detailed home intervention curriculum.

The model has four main components. These components are: child identification and processing, program management, direct services to families and supportive services.

Child identification and processing. The basic areas and the flow of the identification and child processing components are displayed below.



These areas are described in detail in the SKI*HI Administrative Handbook. They are briefly overviewed below.

1. **Screening:** Birth certificate screening and maternal questionnaire high risk hearing screening are the most commonly used screening systems. Hearing screening in intensive care newborn hospital units is also a valuable screening resource. The agency conducting the hearing screening should work directly with the parent infant program to insure immediate referral.

2. **Referral:** A parent infant program must have an active, comprehensive referral system to supplement the screening program. No screening program will identify all hearing impaired infants. A systematic referral system should be administered by the parent infant program. A referral system should include a public awareness referral system and a sensitive professional resource referral system.

3. **Diagnosis:** The parent infant program should have a system in which audiologists and otolaryngologists provide diagnostic services. It is critical that a child entering a parent infant program be diagnosed as hearing impaired by an audiologist and have an otolaryngologist's clearance for hearing aid fitting. Exact hearing thresholds are not necessary and in most cases, are not obtainable.

4. **First Home Contact:** The family should be contacted by the Parent Infant Program immediately upon receipt of the referral. It is critical that the parents are aware of the support the

Parent Infant Program can give. A parent advisor should make the first visit to the home within two days of receipt of the referral. The first visit should be a supportive get-acquainted experience.

5. **Family Orientation:** It is highly desirable to have the complete family of the hearing impaired child come into the program office to become oriented to the program. This is usually the official entry of the family into the program. An orientation program can be shown, additional testing done, and completion of necessary information and forms can be accomplished. The family orientation should give support to the family and help them to have hope and a positive attitude toward the future of their child.

6. **Preassessment:** It is critical that pre-data be obtained prior to the commencement of the home intervention services. Good pre-data will make possible the measurement of the effect of the program on the child and family.

7. **First Quarterly Staffing:** After complete child and family assessment data are available, the staff should meet to evaluate these data and determine the first three month plan for the child and family.

Program Management

The basic areas of program management are (a) Selection of Personnel, (b) Model for Delivery of Services, (c) Inservice Training, (d) Interagency Coordination, (e) Supervision, (f) Budget Management, (g) Program Evaluation.

These areas of program management are described in detail in the SKI*HI Administrators Handbook. A brief overview follows.

1. **Personnel:** The personnel required for a parent infant program will depend to a great degree on the size of the program. However, regardless of the size of the program, it must have one or more parent advisors. A small program operating out of a school district may have just one parent advisor with supportive and administrative time from district personnel. A fully organized parent infant program should include: (a) coordinator-supervisor, (b) parent advisors, (c) audiologist or audiological time, (d) counselor or counseling time, (e) child development specialist or time.

2. **Model for Delivery of Services:** Several models for delivery of services have been developed to serve different geographic areas and resources. The most commonly used is the part-time parent advisor model. Parent advisors are recruited, hired and trained to serve a specific geographic area. They are paid by the case load. This is a cost effective model and is highly successful in rural areas. Another model is the use of center-based preschool teachers who teach preschool in the morning and make home visits in the afternoon. They may teach in the center-based program for three or four days, then make home visits one or two days a week. Some larger programs use full-time parent advisors. There are a variety of combinations of the above models.

3. **Inservice Training:** Because of the nature of parent infant programming, staff will need inservice training in areas such as adult learning strategies, child development, family dynamics, and other areas. An ongoing inservice program is essential to a parent infant program.

4. **Interagency Cooperation:** The parent infant program must work within the community, school and state structures that already exist to provide services for hearing impaired infants and their families. The program must identify these services, then form a linkage which provides a maximum service pattern to families without overlapping of services or gaps in services.

The direct service of weekly visits to the home is a function of the parent infant program. Hearing screening, identification, diagnostic programming and hearing aid fitting require the use of state, regional and local health and medical and audiological services. The parent infant program must access and coordinate these services. Family support, psychological and emotional support and child development services may or may not exist within the milieu of the community service pattern. If they exist, the parent infant program must access and coordinate these services. If they do not, then the program must provide these services as best they can.

5. **Supervision:** The size, geographic location and structure of the parent infant program will dictate the supervision needs and functions. A large, well organized parent infant program should have a full time coordinator who provides supervision services. Many states have one parent infant program which serves the entire state, for example, Utah, Idaho, Montana, North and South Dakota, Arizona, Vermont. These programs employ a full-time coordinator.

Supervision of parent advisors scattered over a large area is critical. These parent advisors should receive regular visits from the supervisor and regular telephone visits. The following pattern has been successfully used:

A. On-site supervisory visits are made monthly for the first three months to new parent advisors; every other month for the remainder of the first year; visits every three months for the second year with visits twice a year thereafter. The supervisor should plan the visit and determine the purpose of the supervisory visit. Time should be allowed between visits or during travel between visits for conferencing.

B. Supervisory phone calls can be made once per month. A regular format for these calls should be used with a pre-established time for the call.

C. Periodic staff meetings can provide group information which is a cost effective supervisory tool.

D. Parent advisors have used collegial supervision successfully. The parent infant program provides time and travel for one parent advisor to visit another parent advisor. She accompanies the other parent advisor on her home visits and observes, discusses and shares ideas, procedures and materials.

6. **Budget Management:** A parent infant program can have its own budget or be a aprt of an institutional budget. Experience with agencies throughout the United States indicates that a self-contained budget for support of the parent infant program is the best way to provide funding. A parent infant program presents unique budgeting problems. Because of the nature of identification of babies, they are continually coming into the program throughout the year. The number of children identified determines the financial demand on the budget. The use of part-time parent advisors also presents special budgeting needs. These and other budget management procedures for parent infant programs are discussed in the management manual.

7. **Program Evaluation:** It is important that program evaluation not be confused with child performance data. Child performance data assists in determining an individualized program for a child while program evaluation measures the effectiveness of the complete program. Child performance data is used collectively to evaluate the performance of the program. SKI*HI has developed a program evaluation system which includes child demographic and child assessment data (see pages 70–87). A national data system collects child data from all SKI*HI adoption programs. Each participating agency then receives an annual evaluation report. This national data bank is available for research on parent infant home programming.

Direct Services To Families

The heart and soul of the SKI*HI Model is the direct services to the family. The Direct Service Component is delivered by a parent advisor who makes weekly home visits. The parent advisor is a certified professional who has complete SKI*HI training.

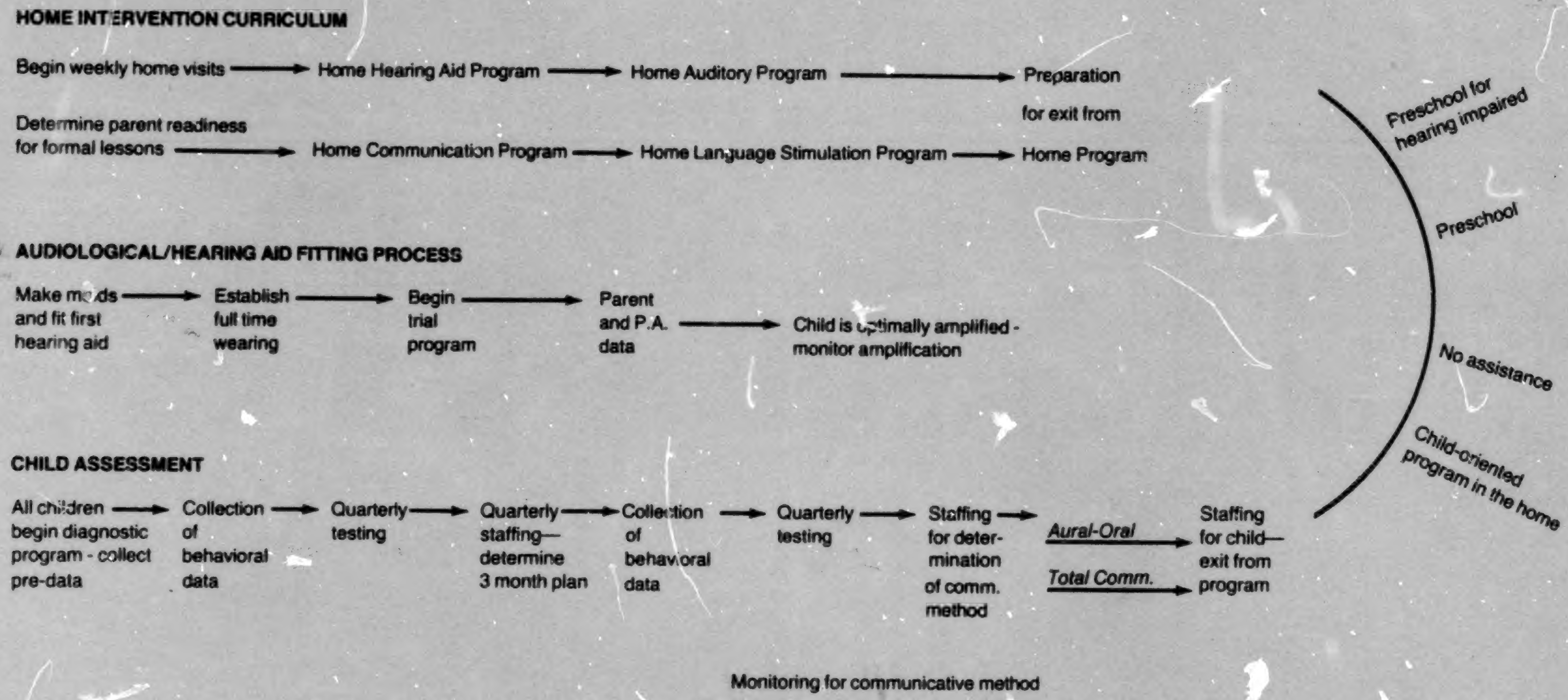
The home visit is about one hour in length and has a format for the delivery. The parent advisor makes a lesson plan prior to the visit and then makes a report of each visit.

It is important that the parent advisor understands the complete direct service component and the sequencing and coordination of the various components of the direct service component. The correct sequencing of the SKI*HI curriculum is critical and should be followed in the order outlined on the following table. The hearing aid fitting process should also be carefully sequenced as shown. The table depicts the complete Direct Service Component in the optimal sequence of services. All services should be delivered simultaneous[illegible]ted from left to right.

It is important that the parent advisor and supervisor understand that as they begin home visits, they should also begin a diagnostic program of collecting pre-data on the child. The first set of earmolds should then be made and the first trial hearing aid be fit. The Home Hearing Aid Program and the Home Communication Program should then commence simultaneously. At the same time the parent advisor should begin collecting behavioral data. Note that by the time the parent advisor completes the Home Hearing Aid Program she should also complete the trial hearing aid program and fit the permanent hearing aid. While the Home Hearing Aid and Home Communication Programs are in process, the parent advisor should commence the monitoring for choosing the optimal communication method. During this time, the child assessment cycle should be in progress. By the time the child is well into the Home Auditory Program, data should have been collected and the communicative situation properly monitored to allow for determination of the appropriate communicative system for the child and family. A staffing should be called to make the final determination of the communicative method. When this is determined, the Language Stimulation Program should proceed either in the aural-oral mode or the total communication mode.

It is critical that the parent infant program be understood not as an end in itself but rather as a means to make the family self-sufficient. The goal of the program should be to make the home a meaningful, communicative, developmental environment for the hearing impaired child. The family should *not* become dependent on the parent advisor. There is no set length of time for home intervention. This depends on the age of the child at entry in the program, the severity of

Sequential Order of Direct Service Component of the Ski*Hi Model


HOME INTERVENTION CURRICULUM
Begin weekly home visits
Home Hearing Aid Program
Home Auditory Program
Preparation for exit from Home Program
Determine parent readiness for formal lessons
Home Communication Program
Home Language Stimulation Program
AUDIOLOGICAL/HEARING AID FITTING PROCESS
Make molds and fit first hearing aid
Establish full time wearing
Begin trial program
Parent and P.A. data
Child is optimally amplified - monitor amplification
CHILD ASSESSMENT
All children begin diagnostic program - collect pre-data
Collection of behavioral data
Quarterly testing
Quarterly staffing—determine 3 month plan
Collection of behavioral data
Quarterly testing
Staffing for determination of comm. method
Aural-Oral
Total Comm.
Staffing for child—exit from program
Monitoring for communicative method
Preschool for hearing impaired
Preschool
No assistance
Child-oriented program in the home

the handicap, and the needs of the family and child. For a family having a child with a moderate hearing loss, the intervention may be only a few months to properly fit the hearing aids and go through the Home Hearing Aid Program. The average intervention time for the child with a profound loss is about eighteen months. The prime consideration in length of the home intervention process is to develop the skills and understanding of the parent, make the home a meaningful communicative environment, and provide a system for necessary supportive services. The parent advisor should then exit the home. The staff should prepare the family for exit from the program and assist the family in accessing available services. The parent infant program should work with the center-based program to insure smooth transition from home-based program to center-based program.

The following is a brief description of the components of the Direct Services to Families or otherwise, the SKI*HI Curriculum.

Information For The Parent Advisor

This is information that the parent advisor should be familiar with prior to initiation of the SKI*HI home programs.

Determining Parent Readiness For Formal SKI*HI Lessons: This information provides parent advisors with guidelines to determine the parents' readiness for the formal home program. If the parents are not ready, strategies are provided which assist the parents to become ready for the SKI*HI lessons.

Providing Psycho-Emotional Support for Families: This unit contains information about family dynamics, the mourning process, role of the parent advisor, assessing the impact of the parent advisor in the home, and identifying and meeting family psycho-emotional needs. The parent advisor is given basic information on each topic and specific strategies for dealing with the issues.

Planning, Delivering and Reporting the Home Visit: This unit is a complete step-by-step guide to the planning, delivering, and reporting of the home visit. This information will enable parent advisors to make proper preparations for the visit, deliver the SKI*HI lessons effectively, and assess parent and child progress to determine the effectiveness of the home visit program.

SKI*HI Programs

There are four basic SKI*HI home programs. Each home program consists of a series of lessons delivered in the home by the parent advisor.

Home Hearing Aid Program: The Home Hearing Aid Program provides a series of nine lessons which facilitate the proper fitting of hearing aids and acceptance of amplification by the child. It provides instructions to the parents in understanding the hearing aids, maintenance of the aids, and overall management of the hearing aids.

Home Communication Program: The Home Communication Program is a pragmatic approach to building a communicative system for the hearing impaired child and his family. The program assists the parents in understanding the importance of communication and how it develops. The program assists the parents in developing essential communicative skills and leads to the selection of an optimum language method for the hearing impaired child and his family. It consists of 12 information lessons and 15 skill lessons. It provides instructions and guidelines for the parent advisor.

Home Auditory Program: This program provides a means of teaching the parent to help the child to use his residual hearing so that he is able to hear and derive meaning from the vocalizations of others and relate them to his own vocal productions. The Auditory Program consists of guidelines in developing the child's hearing through five phases. Teaching guidelines, activities and materials for developing hearing in each phase are given. Information on general auditory programming is provided for the parent advisor.

Home Language Stimulation Program: The Home Language Stimulation program involves content, form and use of language. It uses natural parent-child interactions and conversations which are based on normal language development. The program assists the parents in creating a natural, stimulating home environment that will encourage growth in the hearing impaired child through incorporation of effective language practices in daily living activities. The program provides for a total communication approach and an aural-oral approach.

Supportive Service Component

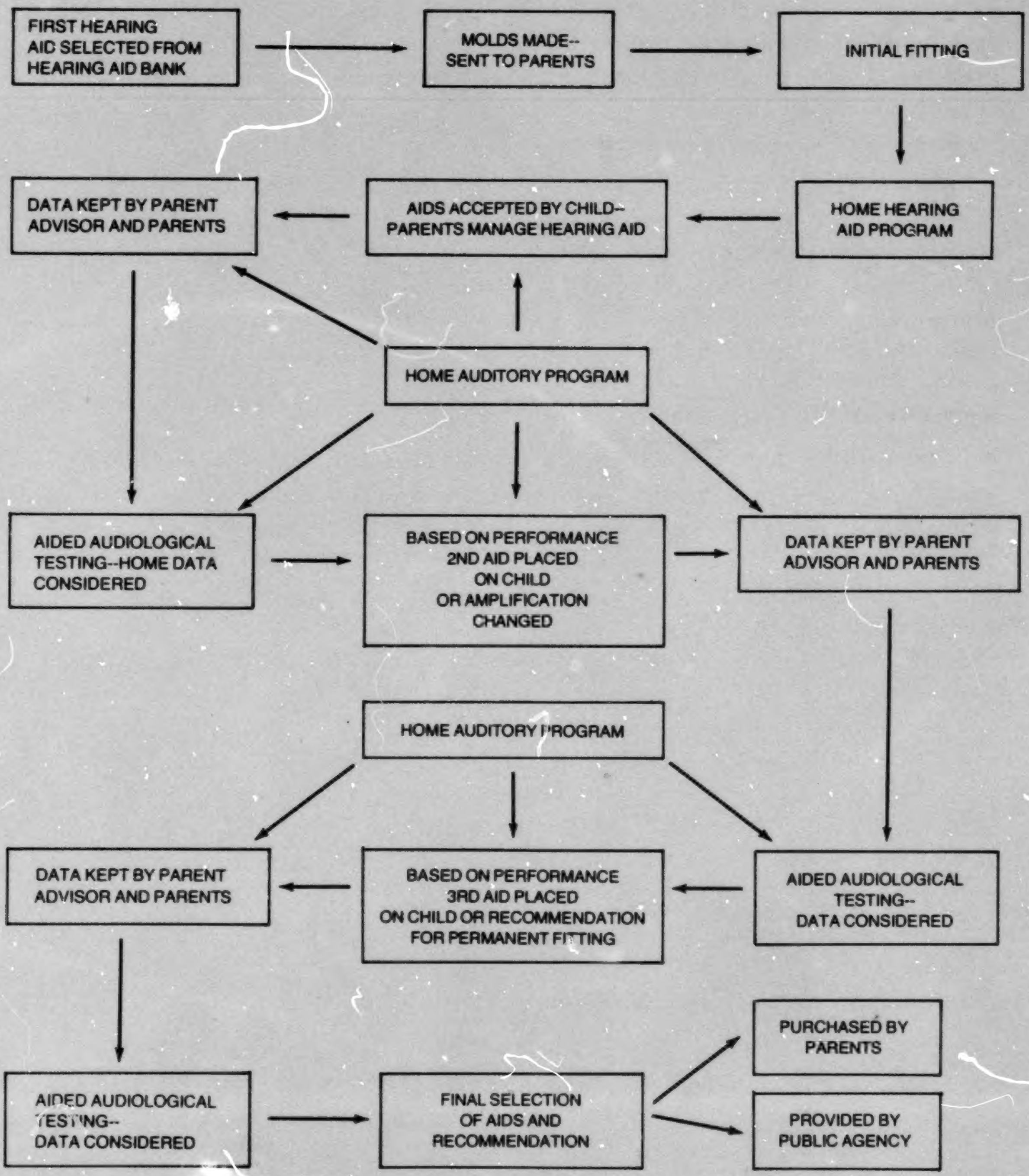
The parent advisor delivers the basic parent infant home intervention services to the home. However, there are some important services which the parent advisor cannot deliver. These services must be offered through a support service component. If these services are not available, the quality of the home intervention services is undermined and the overall effect on the child and family can be greatly limited. For the parent infant home intervention program the following minimal supportive services should be in place: (a) audiological and hearing aid management, (b) materials and devices for parents, (c) psychological-emotional support, (d) child development services.

The supportive services can vary from program to program depending on the needs and the resources of the program. A small school district program is dependent on whatever services the district has available and is willing to provide to the parent infant program. Larger programs can and should have all of the supportive services previously listed. The less support that is provided, the more frustration parent advisors have and the less service parents and children receive. The following describes these basic areas of support services.

Audiological and Hearing Aid Management: This is an essential part of the model that cannot be delivered by the parent advisor. Thus, the parents and child are dependent upon the quality of audiological/hearing aid support services that are otherwise available.

The optimal audiological and hearing aid management for hearing impaired infants and young children can only happen through team management with the audiologist heading the team and the parent advisor and the parents being on the team. Home intervention through the

HEARING AID EVALUATION PROGRAM


FIRST HEARING AID SELECTED FROM HEARING AID BANK
MOLDS MADE--SENT TO PARENTS
INITIAL FITTING
HOME HEARING AID PROGRAM
AIDS ACCEPTED BY CHILD--PARENTS MANAGE HEARING AID
DATA KEPT BY PARENT ADVISOR AND PARENTS
HOME AUDITORY PROGRAM
AIDED AUDIOLOGICAL TESTING--HOME DATA CONSIDERED
BASED ON PERFORMANCE 2ND AID PLACED ON CHILD OR AMPLIFICATION CHANGED
DATA KEPT BY PARENT ADVISOR AND PARENTS
HOME AUDITORY PROGRAM
DATA KEPT BY PARENT ADVISOR AND PARENTS
BASED ON PERFORMANCE 3RD AID PLACED ON CHILD OR RECOMMENDATION FOR PERMANENT FITTING
AIDED AUDIOLOGICAL TESTING--DATA CONSIDERED
AIDED AUDIOLOGICAL TESTING--DATA CONSIDERED
FINAL SELECTION OF AIDS AND RECOMMENDATION
PURCHASED BY PARENTS
PROVIDED BY PUBLIC AGENCY

SKI*HI Model provides the mechanism for this team approach. The following is a brief outline/ flow chart of the SKI*HI audiological/hearing aid management system. The SKI*HI Model calls for an up-to-date hearing aid trial bank which the audiologist can draw on to select trial aids in order to determine the best permanent hearing aid fitting on an infant.

The auditory functioning of the child is highly dependent upon the quality and appropriateness of amplification. The amplification the child receives is dependent on the audiological supportive services. With an audiologist involved in child staffings, home fitting, management of the hearing aids, maintenance of the aids and molds, periodic audiological testing, and selection of the communicative method, the hearing impaired child has optimal opportunity to develop his hearing potential to its fullest capacity.

Materials and Devices For Parents: There are some materials and devices which greatly facilitate implementation of the SKI*HI Curriculum. The following are some important services to provide parents and their hearing impaired child:

1. **Trial hearing aids.** These aids are an essential part of the hearing aid management system and should be provided by the program.

2. **Hearing aid molds.** It is critical that the child have the best fitting earmolds possible during the trial fitting program. The program should provide the molds during this time.

3. **Resource materials for parents.** Most parents have a need to learn more about their child's handicap. The accessibility of a resource library through a home loan system can greatly facilitate the parents' acceptance of the hearing loss and their ability to help and enjoy their child. The SKI*HI Model has a library loan program which provides a free library loan system for parents.

4. **Total communication tapes and video playback machines.** The total communication video tape program is described in the Language Stimulation Program: Total Communication section. The parent infant program should have an adequate supply of video tapes and can work with local video rental agencies to supply video playback machines for parents.

These devices and materials along with the other SKI*HI services make it possible for parents to provide a high quality program for their children in the home.

Psychological and Emotional Support: The parent advisors can provide some psychological and emotional support to parents as they make weekly home visits. These support services are described in the Direct Services to Families Component. However, there are some psychological-emotional support services which cannot be provided by the parent advisor and must be provided by the Supportive Services Component of the SKI*HI Model. These services are: (a) psychological support to parent advisors, (b) parent group meetings,(c) psychological counseling.

Summary

The SKI*HI Institute staff hope that the user of this manual will conceptualize the whole SKI*HI Model and provide a holistic approach to home programming for hearing impaired children and their families. The home programs for implementing the Direct Service Component of the Ski*Hi Model follow. It is important to keep in mind how one program meshes with the other programs and how the complete SKI*HI Model provides a comprehensive program for families of hearing impaired children.

The management of the SKI*HI Model with the roles of the Director, Supervisor, Parent Advisors and support staff is detailed in "Management Guidelines For The SKI*HI Model: A Practitioners' Guide."

USE OF THE SKI*HI MANUAL

This manual contains the complete home visit curriculum delivered by the parent advisor in the home. The curriculum is divided into two main sections: (a) Information For the Parent Advisor (pink tabs) and, (b) SKI*HI Home Programs (purple tabs). The first section contains information the parent advisor should be familiar with *prior* to the initiation of the SKI*HI home programs. This section contains three units: (a) Determining and Promoting Parent Readiness For Formal SKI*HI Lessons, (b) Psycho-Emotional Support For Families, and (c) Home Visit Planning, Delivery, and Reporting. The second section contains the actual SKI*HI home programs. Each program is a separate unit. The programs are: (a) Home Hearing Aid Program, (b) Home Communication Program, (c) Home Auditory Program, (d) Home Language Stimulation Program: Aural-Oral, and (e) Home Language Stimulation Program: Total Communication.

Each program unit has introductory information including rationale and background, overview of the program, use of the program in the SKI*HI model, and general teaching suggestions. Next, the lessons in each program are presented. In each lesson, an outline of parent objectives is given first. The parent advisor can easily refer to this outline to ensure coverage of all lesson topics. Child objectives are also given if appropriate. Next, materials are listed that the parent advisor will need for delivery of the lesson. The actual lesson follows, including discussions and teaching strategies. Review questions for the parents and sample challenges follow the lesson itself. Finally, notes/supplemental information and reading lists follow as appropriate. The parent advisor will want to carefully study the information on pages 67–69 which discusses effective delivery of all lesson materials.

Note: Throughout the curriculum, the parent advisor is referred to as "she" and the hearing impaired child as "he" in order to simplify content for the reader.

References

Balow, I. H. & Brill, R. G. (1975). An evaluation of reading academic achievement levels of 16 graduating classes of the California School for the Deaf, Riverside. *Volta Review, 77,* 255-266.

Berg, F. S. (1976). *Educational audiology: Hearing and speech management.* New York: Grune & Stratton.

Bricker, W. A., & Bricker, D. D. (1974). *An early language training strategy in language perspectives.* In R. L. Schiefelbusch & L. L. Lloyd, *Language perspectives, acquisition, retardation, and intervention.* Baltimore: University Park Press.

Clark, T. C. & Watkins, S. (1978). *Programming for hearing impaired infants through amplification and home intervention.* Logan, Utah: Utah State University Printing.

Craig, W. N. (1964). Effects of preschool training on the development of reading and lipreading skills of deaf children. *American Annals of the Deaf, 199,* 280-296.

Downs, M. P. (1967). Early identification and principles of management. *Proceedings of the International Conference on Oral Education of the Deaf,* June 17-21, 1967, Northampton, Massachusetts and New York City. Alexander Graham Bell Association for the Deaf, Inc., Washington, D. C., *1,* 746-757.

Ehlers, W. H. (1966). *Mothers of retarded children: How they feel, where they find help.* Springfield, Ill.: Charles C. Thomas.

Ewing, A. W. G. (1963). Linguistic development and mental growth in hearing impaired children. *Volta Review 65*(4), 180-187.

Klaus, H., & Kennell, J. H. (1976). *Maternal-infant bonding.* St. Louis: The C. V. Mosby Company.

Lenneberg, E. H. (1967). Prerequisite for language acquisition. *Proceedings of the International Conference on Oral Education of the Deaf,* June 17-21, 1967, Northampton. Massachusetts and New York City.

Levine, E. S. (1960). The psychology of deafness: Techniques of appraisal for rehabilitation. New York: Columbia University Press.

McCroskey, R. L. (1967). Early education of infants with severe auditory impairments. *Proceedings of the International Conference on Oral Education of the Deaf,* June 17-21, 1967, Northampton, Massachusetts and New York City. Alexander Graham Bell Association for the Deaf, Inc., Washington, D. C., *2,* 1891-1905.

McNeill, D. (1966). Capacity for language acquisition. *Volta Review 68*(1), 5-21.

Meadow, K. P. (1968). New horizons for young deaf children, p. 32-37. In Harriet G. Kopp (Ed.). Accent on unity, horizons on deafness—social, communicative, economic. *National Forum I of Council of Organizations Serving the Deaf,* April 24-27. Washington, D. C.

Moores, D. F., Weiss, K. L. & Goodwin, M. W. (1978). Early education programs for hearing impaired children: Major findings. *American Annals of the Deaf, 123,* 925-944.

Northcott, Winifred N. (1966). Language development through parent counseling and guidance. *Volta Review, 68*(5), 356-360.

Phillips, W. D. (1963). Influence of preschool training on achievement in language arts, arithmetic concepts, and socialization of young deaf children. Unpublished doctoral dissertation, Teachers College, Columbia.

Schlesinger, H. S. & Meadow, K. P. (1972). *Emotional support for parents: How, when, and by whom.* San Francisco: Langley Porter Neuropsychiatric Institute, University of California at San Francisco.

Schlesinger, H. S. & Meadow, K. P. (1976). Emotional support for parents. In D. L. Lillie & P. L. Trohanis (Eds.), *Teaching parents to teach.* New York: Walker & Company.

Simmons, A. (1967). Factors contributing to language development. *Institute on characteristics and needs of the hard of hearing child.* Logan, Utah: Utah State University. (Mimeographed handout material.)

Streng, A. H. (1967). To break the sound barrier: Innovation in language teaching. *Proceedings of the International Conference on Oral Education of the Deaf,* June 17-21, 1967. Northampton, Massachusetts and New York City, Alexander Graham Bell Association for the Deaf, Inc., Washington, D. C., *2,* 1273-1288.

Vernon, M. & Koh, S. D. (1970). Effects of early manual communication on achievement of deaf children. *American Annals of the Deaf, 115,* 527-536.

Watkins, S. (1971). *Guidelines for a model hearing impaired infant program.* Unpublished master's thesis, Utah State University.

UNIT 1

DETERMINING AND PROMOTING PARENT READINESS FOR FORMAL SKI*HI LESSONS: THE FIRST HOME VISITS

Introduction

It is not always appropriate for the parent advisor to begin the SKI*HI Home Visit Programs (Hearing Aid, Communication programs) during her first few visits to the home. Many parents will not be ready for these programs because of three major factors:

1. Parents may not be nurturing or enjoying their hearing impaired child.
2. Survival needs of the family (clothing and shelter, medical and financial needs) may not be met.
3. Parents may not be emotionally ready to receive and act upon new information.

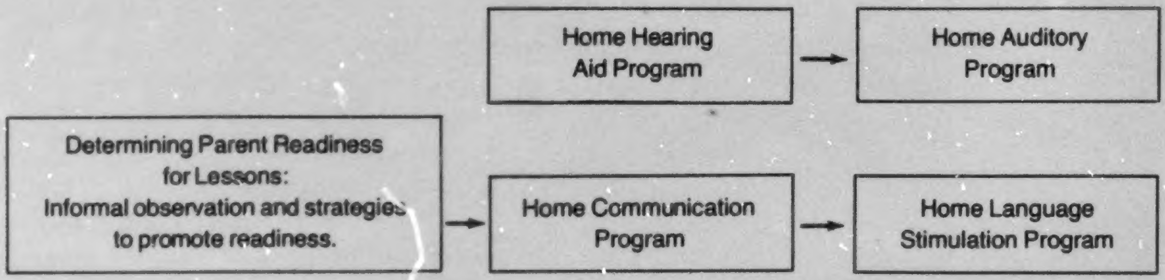
Because these factors may be present in any home, the parent advisor should spend time during her first visits to the home observing, exploring and dealing with these issues. Specifically, the first home visit should consist of the following activities:

1. Make acquaintances (child background information, parent advisor background, etc.)
2. Give brief, simple explanations (possibly review) of the role of the parent advisor and a description of the program.
3. Ask parents "How can I be of help as a parent advisor?"
4. Observe parent nurturing behaviors and emotional readiness to receive lessons; observe survival needs of family.

For many families, these activities will take more than one home visit. If it is obvious during these first home visits (as a result of observation or parent requests for help) that parents are having problems with survival, emotional adjustment, or nurturing behaviors, the parent advisor should then implement specific strategies to deal with these problems. This section includes discussions on observing and dealing with these problems in the home.

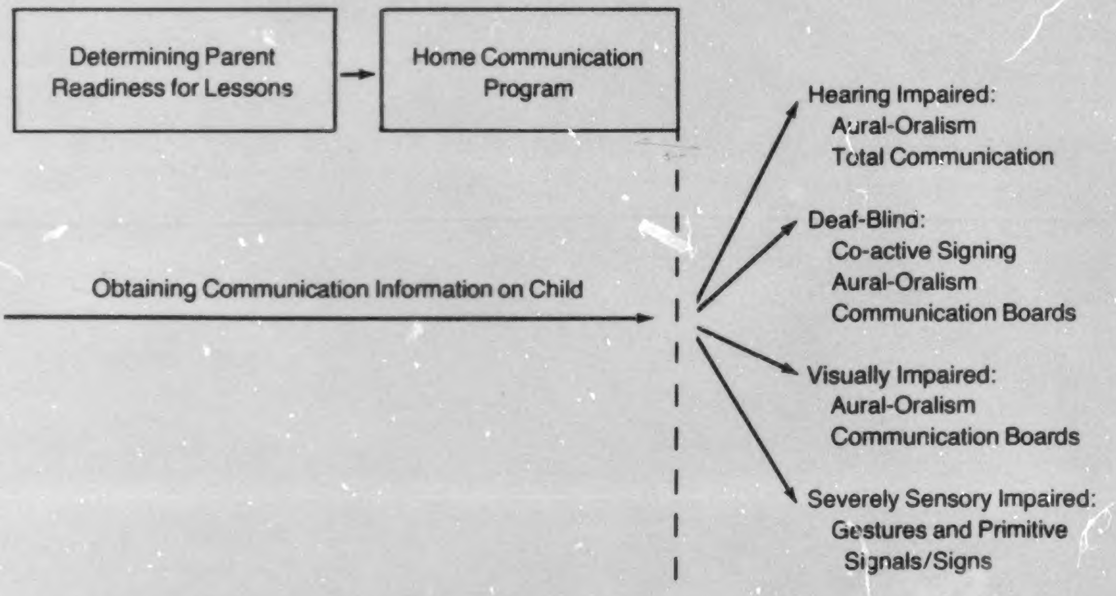
Use of Program in SKI*HI Model

The following schematic shows how this program, Determining Parent Readiness For Lessons, fits into the SKI*HI Model.


Home Hearing Aid Program
Home Auditory Program
Determining Parent Readiness for Lessons: Informal observation and strategies to promote readiness.
Home Communication Program
Home Language Stimulation Program

It should be noted that parents of all sensory impaired children (including hearing impaired children) need to establish a successful relationship with their child based on caring, touching, eye contact, and other forms of meaningful contact. Because of this, the concepts in the programs, Determining Parent Readiness For Lessons and the Home Communication Program, are used with all sensory impaired children in the SKI*HI Institute including deaf-blind and visually impaired children.

As parents learn how to handle, interact with and enjoy their child, information is obtained that will be used in determining the most appropriate communication mode for the child. This assessment can be seen graphically on the following chart. A detailed discussion of this assessment as it relates to the hearing impaired child is on pages 289–315.


Determining Parent Readiness for Lessons
Home Communication Program
Obtaining Communication Information on Child
Hearing Impaired:
Aural-Oralism
Total Communication
Deaf-Blind:
Co-active Signing
Aural-Oralism
Communication Boards
Visually Impaired:
Aural-Oralism
Communication Boards
Severely Sensory Impaired:
Gestures and Primitive Signals/Signs

Observing Parent Readiness and Strategies to Promote Readiness

During the first visit(s) to the home, the parent advisor will need to determine the parents' readiness to receive the SKI*HI lessons. Parents may not be ready to receive lessons if they are: (a) not caring for (nurturing) the child, (b) emotionally unready to act on new information, (c) not having their survival needs met (including clothing, shelter, food). Each of these areas will be discussed in a section below.

Each section first contains an introduction, then a guide to observing the behaviors or needs in question. The parent advisor should not formally administer the guide to the parents. Rather, she should be aware of the items on the guide and watch for evidence of them during the first home visits. Finally, strategies follow which promote parent readiness. If parents are having difficulty with items on the guide, the parent advisor assists them in dealing with these problems so that they will be better able to receive the formal SKI*HI lessons.

In all three areas, nurturing, survival needs, and emotional needs, the parent advisor must use her own judgment in deciding when to begin SKI*HI lessons after initiating a process of meeting needs. The parent advisor should be conscious of not allowing herself to be bogged down or side tracked for an inordinate time in this phase of her service. She should try to begin the lessons as soon as possible, perhaps when she becomes aware that the parents are beginning to develop a more positive outlook with the prospect that their problems are on the way to being addressed or solved.

Caring For The Hearing Impaired Child

Introduction. Perhaps the most important things parents can give their hearing impaired child are LOVE and CARE. The child who receives CARE will learn to care for himself and to attach to other human beings. Development of this care of self (personhood) and care of others (interpersonal relationships) forms the basis of all other human experiences.

Quite simply, the most important thing the parent advisor can gently inspire in the parents is ENJOYMENT OF THE HEARING IMPAIRED CHILD. All of the SKI*HI home visit lessons are designed to facilitate this. Parents are provided emotional support as they deal with the loss of a "perfect child" and the rebirth of their own child. They need to recognize the unique qualities of their own child, one of which is hearing impairment. Parents are helped to see the strengths of the child and their own strengths. Parents are helped to joyfully play and communicate with their child. As the SKI*HI Program progresses, parents experience increasing affection for and joy in their hearing impaired child.

However, for some parents the enjoyment and nurturing of the child is severely disrupted by the diagnosis of hearing impairment. The child is no longer a normal child but a handicapped child who requires special treatment. Some parents become so preoccupied with the fact that the child is "different" that they back off from their natural nurturing behaviors and concentrate completely on treating the child's problems. These parents need encouragement to enjoy the child as he is. They need help with bonding and nurturing behaviors before concentrating on the implementation of specific SKI*HI skills. Some parents simply do not know how to nurture children. They too need help in learning how to enjoy their hearing impaired child. Because of this, it is recommended that each parent advisor pay special attention to the parents' enjoyment and nurturance of the child (bonding) during the first visit or visits to the home. The parent advisor may want to use the guide below in deciding if the parent is touching, holding, responding to, and showing enjoyment of the child. If the parent is *never* or *infrequently* using most of these nurturing behaviors on the guide, the parent advisor should postpone the initiation of the Home Hearing Aid and Home Communication Programs and follow the suggestions under Guide to Promoting Nurturing on page 25.

Observing parent nurturing. The following guide will assist parent advisors to determine if parents are nurturing their child. Remember the guide is not a formal assessment. Parent advisors should be aware of the behaviors on the guide and watch for evidence of these behaviors, but they should not formally administer the guide to parents.

Parent Nurturing Guide

1. **Touching:** Does the parent frequently: (a) kiss the child, (b) pat and stroke the child, (c) touch the child in play (patting hands together in pat-a-cake, bouncing child on knee, etc.), (d) cuddle the child?
2. **Looking:** Does the parent frequently: (a) look at the child when communicating with him (maintaining eye contact), (b) glance at the child when he is present, (c) focus on the child when caring for him?
3. **Holding:** Does the parent frequently: (a) support baby's back and neck (avoid neck flop), (b) keep the child in a safe place or in the presence of a responsible care giver, (c) protect the child from injuries (shade his eyes from the sun, remove hazardous objects), (d) touch the awake child in a stimulating way while holding him (bouncing, patting), (e) hover (lean toward child, bend over to be near him), (f) *hold the baby close during bottle feeding rather than setting him aside and placing the bottle in his mouth, (g) *hold the baby on the shoulder to burp rather than setting him down and patting his back?
4. **Enjoying:** Does the parent frequently: (a) smile at the child, (b) laugh at or with the child, (c) wink at the child, (d) make interesting faces, funny sounds or actions to amuse the child, (e) enjoy playing with the child, (f) avoid shouting, scolding, or expressions of overt child annoyance, (g) avoid slapping, spanking or otherwise physically punishing the child?
5. **Comforting:** Does the parent frequently: (a) comfort the crying child, (b) speak reassuringly to the child when the child is frightened, hurt, confused or otherwise distressed?
6. **Vocalizing:** Does the parent frequently: (a) coo, gurgle, babble or talk to the child, (b) hum or sing to the child, (c) convey positive feelings when communicating to the child?

*Applies uniquely to infants (pre-toddler).

Promoting nurturing. If parents are never or infrequently using most of the nurturing behaviors on the guide, the parent advisor will then want to use the suggestions in the following Guide To Promoting Nurturing.

Guide To Promoting Nurturing

1. Realize that an important reason why parents may not be displaying affectionate behaviors toward their child is because they are "grieving" (see pages 34–39 for a discussion of this process). Parents may feel incapable of warmly touching and interacting with the child because of their feelings of anxiety, rage, depression, and frustration. Parent advisors need to allow parents time to grieve. However, parent advisors can provide support during this grief process as discussed on pages 34–39.

2. Parents need to understand the importance of providing companionship and nurturance for their child. It is suggested that parent advisors postpone the initiation of the Home Hearing Aid and Home Communication Programs for a few visits and concentrate on informally discussing the importance of nurturing with the parents and modeling nurturing behaviors to them. A suggested brief discussion script follows:

> "The basic needs of your child are food, warmth and companionship. Providing love and care is much more important to your child's eventual total development than keeping your child warm and fed. When young children are fed and dry and still cry, they are indicating their need for companionship. Picking up your child, cuddling him, rocking him, and talking to him will provide the companionship that your child so needs and wants.
>
> During the first few years of life, your child is completely dependent on you. You are his provider of food and warmth and most importantly care. Only when your child can feel completely dependent on you (you are there to hold and cuddle and nurture him), will he feel secure enough to move out on his own. This sense of security, rather than fear, will enable your child to explore his environment, learn, and gain independence. So your early nurturing will enable your child to grow into an independent, confident adult. It will also help him to be a happy, well-adjusted child since he will feel your warmth and affection and in turn feel affection for you and himself. Of course, this will increase your enjoyment of your child and of yourself.
>
> There are three basic nurturing behaviors that form the foundation of all other nurturing behaviors. They are: (a) eye-contact, (b) touching-holding the child, (c) smiling to the child.
>
> Simply remembering to look at the child, especially when caring for or communicating with the child, will help your child feel companionship with you. Of course, frequently holding and touching your child will enable him to feel close to you and loved by you. Finally, the social smile forms the base of other later social interactive behaviors. Smiling frequently to your child will help him feel appreciated and will encourage him to respond back to you."

Parent advisors may want to refer to the SKI*HI Cognition Program for a detailed discussion on nurturing and bonding. This program includes a discussion on what bonding is, why it is so important, why American babies and handicapped babies may have difficulty bonding, and what parents can do to promote bonding. The Cognition Monograph can be obtained from:

SKI*HI Institute
UMC 10
Utah State University
Logan, UT 84322

3. While parent advisors are informally discussing the importance of early nurturing, and providing incidental modeling of bonding, it is vital for them to demonstrate nurturing behaviors to the parents. It is suggested that the parent advisor select one of the three basic nurturing behaviors listed above, and then tell the parents that this behavior will be emphasized during the home visit. The parent advisor will want to demonstrate that behavior during selected home visit activities. Some sample home visit activities for teaching the three basic nurturing skills follow.

Eye contact:

a. Role play talking to the parent but looking elsewhere, looking at the parent while talking to someone else, and focusing all attention on the parent when talking. Compare with parents how they felt each time.

b. Reinforce parents when they make eye-to-eye contact with their infant. Set up play situations where they can maintain it.

c. Ask parents to show their child different things, looking at him as they do. If the parents watch the child, he will know they are interested in what he is doing.

Touching/Holding:

a. Have the parent hold the infant using soft stroking of the cheeks, back, arms, hands or legs. This will usually be relaxing and comforting to the child. Stress that the parent should do this frequently throughout the day.

b. Have the parent place the child on variously textured surfaces, for example, terry cloth, shag, or vinyl. Have the child clothed only in a diaper or wearing as few pieces of clothing as the weather dictates.

c. Have the parent rub child's arms, hands, legs, and feet applying firm yet gentle pressure. Baby lotion can be used.

d. Encourage parents and siblings to hold, rock, and gently bounce the infant for periods of time during each day.

Smiling:

a. Have parents become aware of their own facial expressions around the home. Have them periodically ask themselves, "Am I showing my child a happy/smiling face, a scowl, a blank face?" Parent may want to put up reminders around the home to "smile" or "look happy."

b. Have the parent smile frequently to the child when diapering or feeding him.

After the parent advisor has conducted one or more of the above activities to teach a particular nurturing behavior, she should challenge the parent to use the behavior during the week.

4. After these three basic nurturing patterns have been established by the parents, the parent advisor should begin the Home Communication and the Home Hearing Aid Programs. The Home Communication Program elaborates on some nurturing behaviors and introduces new communication behaviors that provide nurturing for the child. Particular emphasis should be placed on the following skill lessons in the Communication Program that stress interactive bonding skills: (a) lesson 2 on freedom to explore and play, (b) lesson 6 on establishing eye contact, (c) lesson 10 on touch, (d) lesson 11 on responding to the child's cry, (e) lesson 12 on stimulating babbling, and (f) lesson 13 on responding to the baby.

Meeting The Survival Needs of Families

Introduction. It is impossible for family members to think about such things as hearing aids and interactional turn taking if their primary survival needs are not being met. If children are sick or if money is not available for basic living expenses, time spent on issues other than these most basic ones will be to no avail.

There are two levels of meeting the primary needs of family members: (a) meeting immediate survival needs of families, (b) meeting later medical, nutritional, financial, and legal needs. The first home visit or visits are devoted to the first level of determining and meeting the immediate survival needs of families. The following discussions are to help parent advisors determine immediate survival needs and courses of action should there be problems. The life styles of some families may include problems (such as impoverished, pest-ridden environments) that simply cannot be rectified before formal SKI*HI lessons are presented. The important thing for the parent advisor to do is to assume an empathetic "I'm on your side" approach during the early visits to the home and to lend support to the parents' survival concerns.

Determining family survival needs. The following guide will assist parent advisors to determine if family survival needs are being met. Remember the guide is not a formal assessment administered by the parent advisor to the parent. Rather, the parent advisor watches for the problems in the guide and asks parents "How can I help?" in order to identify immediate survival needs.

Guide to Determining Immediate Survival Needs of Families

1. **Shelter and Clothing:** (a) Is the home warm, dry and pest-free? (b) Are space and furnishings adequate to provide for eating, sleeping, and other basic needs? (c) Is the child appropriately dressed (clothing that fits and is appropriate for weather/season)?

2. **Medical:** (a) Is the child sick? (b) Are other family members sick? (c) Do parents know who to contact for medical treatment?

3. **Nutritional:** (a) Is adequate food available? (b) Is the child consuming nutritional food? (c) Are other family members consuming nutritional food?

4. **Financial:** (a) Are basic living expenses (food, shelter, clothing, etc.) being met? (b) Do parents know where to go for financial consultation?

Meeting family survival needs. If families are having difficulties with the items on the guide, parent advisors may want to take the following courses of action.

1. If families are having problems in any of these areas, the parent advisor may want to postpone the initiation of the Home Hearing Aid and Home Communication Programs until resolutions of the problems are underway.

2. Parent advisor should put parents in contact with appropriate people (i.e. doctors, public health nurses, welfare workers).

The parent advisor may want to discuss with parents the handout material "Parent Resource Information" which contains lists of national and local resource people. This information is available from the SKI*HI Institute with local resource information added by local programs.

3. Parent advisor should discuss with her supervisor about spending time actually taking the family to the doctor, welfare agency, etc. Although this should not become a regular practice, parents may need this help during the first few weeks of the program in order to become physically and emotionally prepared for receiving the SKI*HI home programs.

4. With advance agreement of the family, the parent advisor may want to invite local resources (nutritionist or public health nurse) to accompany her on home visits to give information and advice to the family.

Meeting later medical, nutritional, legal and financial needs. It is important to realize that even if basic survival needs are observed and identified during the first home visits (or if observation indicates no survival problems), other medical, nutritional, financial and legal needs may occur later that require monitoring. The guide below can be used during subsequent home visits to watch for these problems. Here are suggested courses of action should problems be apparent.

Guide To Determining the Later Medical, Nutritional, Legal and Financial Needs of Families

1. **Medical:** (a) Is the child receiving regular medical checkups and inoculations? (b) Is the child receiving appropriate medical treatment when ill? (c) Is prescribed medicine being appropriately administered? (d) Are the child's dental needs being met? (e) Is genetic counseling being given to parents as appropriate? (f) Are the services of ancillary medical personnel utilized as appropriate, such as a physical therapist (P.T.), occupational therapist (O.T.) etc.?

2. **Nutritional:** (a) Is the child eating a balanced diet with meals served including the four basic food groups? (b) Are special diet needs of the child being met? (c) Does the child eat nutritious snacks?

3. **Legal:** (a) Do parents know the legal rights of their handicapped child? (b) Do the parents know who to contact for legal consultation? (c) Do parents know what tax deductions are available because of their having a handicapped child?

4. **Financial:** (a) Is family income sufficient for recreation? (b) Is family income sufficient to cover bills (telephone, etc.)? (c) Is family income sufficient for the special needs of the child (hearing aids, O.T., P.T., etc.)? (d) Does family income allow for some savings?

Courses of Action.

1. If the above needs are not being met, parent advisors should determine *why*. For example, if the child is not receiving proper medical treatment, is it because of transportation problems or money problems? Once the reasons have been discerned, parent advisors should assist families in contacting local resource people to help remedy the problems. As appropriate, resource people can be invited to accompany the parent advisor to the home to give information and advice to the family in such areas as nutrition, physical or occupational therapy and financial aid.

2. The parent advisor may want to present one home visit on the "Parent Resource Information." This information is available from the SKI*HI Institute. It can be inserted into section VII of the Parent Notebook (see page 157). The parent resource information packet discusses such things as: (a) what are the legal rights of handicapped children, (b) what tax deductions are available for handicapped children and, (c) community, state and national resources for hearing impaired children.

Helping Parents Become Emotionally Ready to Receive New Information

Parents of handicapped infants are reported to experience greater emotional problems than parents of normal infants. These emotional difficulties are not universal. When they do occur, they vary widely in nature. However, some emotional adjustment problems are noted with sufficient frequency to warrant attention by parent advisors. These common emotional responses of parents to the discovery of disabilities are discussed on pages 34–39 of this manual. They include such emotions as denial, anxiety, anger, depression, and frustration. It is entirely possible that some parents may simply be unable to deal with formal lessons if these emotions are so intense that they cannot concentrate on new information. Because of this, it is appropriate for the parent advisor to do the following: (a) determine the feelings the parents are experiencing as discussed on pages 34–39; and (b) determine if the intensity of the feelings is rendering the parents incapable of receiving or discussing new information. Try presenting some new information and see how parents react. If parents are incapable of receiving or acting on the new information, temporarily postpone or simplify lesson material presentations while assisting parents to deal with the grieving process. A discussion on how parent advisors can support parents in the grieving process is on pages 34–39.

UNIT 2

PSYCHO-EMOTIONAL SUPPORT FOR FAMILIES

Introduction

In the past few years, attention has been focused on the need for professionals to provide psycho-emotional support to families of hearing impaired children. The continued increase in parent-centered versus child-centered programs reflects this trend and has raised the consciousness of professionals. The professional providing services in the home on a weekly or biweekly basis may find her effectiveness hampered by the emotional issues faced by the families she serves. Parents may view the parent advisor as the professional who is most knowledgeable about their child, a trusted person who respects their opinions, and who is, therefore, the one most capable of understanding their problems. In many cases, the problems discussed with or observed by the parent advisor relate only indirectly to the hearing impaired child. These problems may include husband and wife disagreements, financial problems, religious needs, difficulties in coping with the extended family, or career decisions. Thus, although the parent advisor is *not* expected to assume the role of a psychologist or counselor, she may find an understanding of the communication skills from these fields to be useful in effectively implementing the SKI*HI Curriculum.

The following are not lessons to give to parents, but an attempt to provide the parent advisor with a basic knowledge of the psycho-emotional needs of families. This goal can only be achieved through an increased awareness of family dynamics, impact of the hearing impaired child on those dynamics, and impact of the parent advisor in the home. The parent advisor needs this awareness to identify the needs of families and to understand her own capabilities and limitations in meeting those needs.

The intent of this section is to assist the parent advisor in making a realistic assessment of her impact on the families she serves. This portion of the SKI*HI Manual will *not* provide the parent advisor with training to make her a psychologist or counselor. It is not intended that she assume the role of *healer* or *miracle worker*. The parent advisor who assumes these roles may feel tremendous pressure and may suffer the emotional burn-out so common in the helping professions.

Family Dynamics

Introduction

One way to achieve a better understanding of the structure and interaction of families is to view the family as a system of interdependent elements which come together to form a new unit with both internal and external boundaries. The interdependent elements are the family members. In today's society, family members are not limited to the traditional father, mother, son and daughter. Others within the family system might be grandparents, aunts, uncles, cousins and/or friends. The parent advisors needs to be acquainted with extended family members and friends who function as interdependent elements in the family system.

Boundaries

The family system has both external and internal boundaries. While the external boundary is a separation point between the family and the outside world, the internal boundaries divide the family members into subgroups. Neither the external nor internal boundaries can actually be seen, but their impact on family systems is definitely observable.

The external boundary determines who does and who does not function as a member of the family system. Family members may exhibit very different behaviors within the external boundary of the family than they exhibit outside that boundary. For example, the quiet, shy, well-behaved child the parent advisor sees in the office, may exhibit frequent, loud tantrums at home. Or the audiologist may observe a loving, nurturing mother who may actually be abusive to her children at home.

The internal boundaries determine the closeness of the relationships within the family system. A typical internal boundary exists between the two parents and the children. In other words, the parents have a special relationship which excludes the children. The parents form one subgroup, and the children form another. A subgroup often observed in families of the hearing impaired is that of one parent, usually the mother, and the hearing impaired child (see Family Drawing I, p. 50).

Both internal and external boundaries may be characterized as open or closed. In *An Introduction to Family Intervention*, a slide/tape program developed by Lewis, Morrow and Melville (1977), open and closed boundaries are described as follows:

> An open external family boundary permits the exchange of information between institutions outside of the family and the family system itself. An open boundary in a family system would permit the family to respond to outside demands. The internal boundaries of the family may also be characterized as open or closed. When those internal boundaries are closed, certain family members are unable to have contact with other family members.

On the other hand, if external boundaries are closed, communication is limited between the family and outside institutions. Open internal boundaries allow a flow of communication between family members.

If the parent advisor is faced with a family whose external boundaries are closed, she may find the family unwilling to listen to lessons, complete challenges or even accept services. Problems could occur in a situation where home visits are usually with the mother in the evening while the grandmother is the primary caregiver during the greater part of the day. If the internal boundary is closed so that mother and grandmother do not communicate, the effectiveness of home visits is decreased (see Family Drawing II, p. 51).

Family Balance

A family system works to maintain balance or homeostasis by meeting the needs of family members. To meet the needs of family members effectively, roles are assigned to them. Becoming aware of the roles of each family member can make the job of the parent advisor easier. For example, who is the decision maker in the family? Who is the child's primary caregiver? Who is responsible for medical care? Who supports the family financially? Any or all of these roles could be held by one person. If this one person happens to be a family member with whom the parent advisor has little contact, ineffective service can result.

The family balance can be disturbed by a variety of internal and external changes or stresses. Family balance is determined by the family's ability to deal with these stresses. Normal, healthy families may appear to be abnormal while coping with these changes. Examples of internal stresses are marriage, divorce, birth, death, illness, and suspicion or diagnosis of hearing impairment. Examples of external stresses are a new job, loss of a job, purchase of a new home, inflation, a broken-down car, lack of appropriate services for the hearing impaired child in the local community, or demands from professionals to spend more time working with the hearing impaired child. Whether the stress is internal or external, the family attempts to readjust and again achieve homeostasis (a state of balance) in order to continue meeting the needs of the family as a group and as individual members. The parent advisor is the professional who provides the information and empathy necessary for this readjustment.

Family Communication

How well a family communicates can determine how well home intervention services are received and implemented. Three basic types of communication occur in families: factual statements, commands, and feeling statements. Factual statements have the least impact on relationships in the family while feeling statements have the most impact. Family members who are unable to express their feelings or accept the expression of feelings from others will primarily rely on factual and command communication. Communication will be inhibited if a family experiencing the mourning process is limited to these two less significant types of communication. If the parent advisor finds herself working with this type of family, she may want to emphasize the importance not only of talking about the child's feelings, but of talking about the parents' feelings as they work through the Home Communication Program. The parent advisor should encourage the parents to write about their feelings and the child's feelings in the language experience book (pp. 329-333).

Family Rules

Any group of people living together must have rules to insure peace among the group members. Family rules may be either spoken or unspoken. If the rules are spoken, the family members know what is expected of them. If they are unspoken, family members may not know the rule exists until it is broken. Family rules can also be negotiable or non-negotiable. If a rule is no longer useful or begins to cause problems between the members, can it be changed or discarded? Or, are the rules very rigid, unchanging and unaccommodating to changes in the family?

Family rules may be made by one member or by a consensus of members. How family rules are made is of particular importance to the parent advisor. For example, if the family rules are made by the father, and the parent advisor works primarily with the mother, rules may be made prohibiting the implementation of challenges. Or perhaps the parent advisor is working with both father and mother, but grandmother makes all the family rules. In either case, if the parent advisor determines that the family rules are authoritarian, every effort should be made to include that authority in the home visits. Whether or not the parent advisor has any impact on this family may depend on the relationship she has with this family member.

The Mourning Process

Introduction

The mourning process was first discussed by Lindenman in 1923, after studying the survivors of the Cocoanut Grove fire (Blair, 1981). This process is experienced by all normal, healthy individuals in a crisis. Sometimes called the grieving process, individuals involved in this process are mourning a loss. A mourned loss might include the loss of a loved one through separation, divorce or death, loss of good health through serious illness or accident, loss of a job, inability to have children, or loss of the perfect child through the suspicion and diagnosis of hearing impairment. Dr. Ken Moses (1984) summarizes these losses to mean the loss of a dream. All human beings have experienced the loss of a dream in one way or another so this process is not unique to families of hearing impaired children. This common experience with the mourning process gives the parent advisor empathy for parents of young, hearing impaired children. The parent advisor may have lost a close relative through death, while the parent has lost a dream of a perfect child through the diagnosis of a hearing loss.

In the film, "Assisting Parents Through the Mourning Process," Dr. James Blair (1981) states that the parents of the hearing impaired child "have to let that first fantasy child they were going to have die." To maintain balance, the family must readjust to this new information about one of its members. Life is a process of building dreams, attaining some and losing others; and, hopefully, readjusting and building new dreams. Because the SKI*HI Program is geared to the family of the young hearing impaired child, the parent advisor becomes an active participant in this life process of the families she serves.

Stages in The Mourning Process and Possible Outcomes

The mourning process begins at the moment of the first suspicion that something is wrong with the child. Dr. James Blair (1981) describes the stages of the mourning process for the family of the hearing impaired as including the following:

Denial & Anxiety
Anger or Rage
Bargaining
Depression and Guilt
Frustration and Confusion
Acceptance

One must understand that parents do not move smoothly through these feeling states in a sequential order. This is a mourning *process*. Although parents typically begin with denial and anxiety, they may go from feelings of denial to feelings of depression and guilt to anger and range, etc. Parents may also appear to readjust to a new dream when their child is three years old; and, later, go through the entire process again when their child enters school, becomes an adolescent, or leaves home.

Each of these stages can be viewed in terms of its positive and negative outcomes. This discussion describes the *process* used to facilitate the understanding of families. It is not a system to categorize parents as being "stuck" in this or that stage.

These feeling states are experienced by normal, healthy individuals in a crisis. However, it should be noted that even psychologically healthy individuals do not progress at the same rate through this process. Families may differ greatly from one another. One can assume the percentages of psychologically healthy and unhealthy individuals to be the same among families of the hearing impaired as among the normal population. Therefore, while the parent advisor will usually be working with psychologically healthy individuals, she may occasionally be confronted with emotionally unstable people. Because of this small percentage of individuals, the parent advisor must realize that no matter how much she might be able to help, success, in terms of acceptance of the hearing loss, may not be possible.

The parent advisor must also be aware that even in normal, healthy families, the parents may not be the kind of parents we want them to be. Our goal is to help these parents be the best parents they can be, given their social, emotional, educational and economic backgrounds. This process of mourning that so often seems to frustrate our good intentions to help these families is really a positive, protective growth process for dealing with a loss.

Denial

Denial allows people the time they need to "cushion the blow" of bad news. It is a healthy, coping mechanism needed by most parents to integrate the loss of their fantasy child and find the external support needed to readjust to the new child. Moses (1984) describes four levels of denial:

1. The parents deny the child is impaired. ("My child responds to everything I say.")
2. The parents accept the child as impaired, but deny that it is permanent. ("We will find a cure!")

3. The parents accept that the child is impaired, but deny that it will have an impact. ("We can overcome the problem. It will not change our lives.")
4. The parents accept that the child is impaired, but deny they feel anything about it. ("He's just deaf, that's all.")

Possible outcomes of denial include the family's not completing challenges, not putting the hearing aid on the child, or perhaps even refusing services. These situations often result in the parent advisor's becoming frustrated and confused. It is not uncommon for the parent advisor to find herself mourning the loss of her own dream for the hearing impaired child because of the parents' denial.

Anxiety

Anxiety mobilizes the energy needed to make changes. However, early expression of anxiety may be used to get others to do something. When working with an anxious parent, the parent advisor may also feel anxious. The temptation is to tell the parent to calm down, and to comfort them by telling them that things are not so bad.

The primary task of the parent advisor is to listen to the anxious parent, express understanding, and acknowledge the rationality of their feelings. When the parents perceive that they are accepted and their feelings are acceptable, it is possible to channel those feelings in more positive ways. The parent advisor may be able to help the parents prioritize their feelings, organize what they want to do and establish appropriate first steps. While the anxiety may not disappear, they may gain the ability to think more clearly and make decisions. The parent advisor should not make decisions for the parents but help them determine their priorities.

Because anxiety is not a comfortable state of being, there tends to be a cycle where the grieving person fluctuates between denial and anxiety. Ultimately, however, the cycle is broken by movement through the remainder of the mourning process.

Anger or Rage

Anger or rage is a necessary step along the way to acceptance of a loss. It is the motivating feeling state which gives the parent the power to do something. It is frequently the result of a lengthy depression, state of frustration or fear. This anger may be expressed directly or displaced onto family members, friends and professionals. Comments heard by the parent advisor such as, "This isn't fair!", "He can too hear!", or "Why didn't the doctors know this sooner?" reflect this anger.

Many parents are able to channel their anger into positive action. An example might be a parent who returns to educate the physician who mis-diagnosed her child as mentally retarded or normal hearing rather than hearing impaired. Another example is a group of parents who form a new organization to provide information and support to other parents going through similar experiences. The parent advisor may observe the most distressing, negative outcome of anger which is child abuse. This happens when all of the anger is displaced onto the hearing impaired child. Even though the child had no choice in determining his destiny, he is a visible reminder to the parent of a cause of conflict in the home. Child abuse is less likely to be an outcome of anger in families which were intact and mature prior to diagnosis of hearing impairment in their child.

Bargaining

Bargaining is a coping mechanism employed not only by parents of hearing impaired children, but also by the seriously ill. The individual may attempt to bargain with God, making promises never to smoke, drink, or swear if God will just make everything all right. Attempts may also be made to engage the professional in bargaining with questions such as, "If I make sure that my child wears his hearing aid, will he learn to talk?" or, "If I work with my child everyday, will he be able to go to a regular public school?" While recognizing the parents' need to ask these questions, the parent advisor should also be aware that she cannot know the answers with absolute certainty.

In addition, parents may engage in bargaining with themselves by looking for miracle cures. They believe they can solve the problem if they secure another diagnostic opinion, try another hearing aid, try acupuncture, travel to California for a cochlear implant for a child who is not a candidate, or change services. Some parents may be consumed with a need to try anything new before obtaining *adequate information* on the "cures." This self-bargaining can be frustrating to professionals. In a positive light, the self-bargaining parent may be willing to try anything with a potentially positive outcome. The parent advisor might compare the positive aspects of the self-bargaining parent to the parent who is unwilling to try anything new. The self-bargaining parent is more likely to be willing to follow the audiologist's recommendation to change from a body aid to an ear level aid with Libby Horn earmolds, thus providing the child with improved hearing for the high frequencies, than the unwilling parents.

Parents should be encouraged to seek a second opinion if they feel the need. Some home visit services are started as a result of parents who sought a second opinion. The difficulty arises when parents refuse to implement the program because they are positive they will find a cure. Of course, no one knows for certain if a cure is possible. With this understanding, the family can be encouraged to implement the program until the cure is found. After all, the information in the SKI*HI lessons should only increase the child's ability to catch up if he is cured. Totally discounting a miracle cure as even a possibility serves only to put the parent on the defensive.

Depression and Guilt

Depression and guilt are two difficult feeling states for most professionals to deal with effectively. Because the professional is uncomfortable with these two feeling states, she may attempt to deny their existence. If the parents are depressed, the professional may work at cheering them up. If the parents feel responsible for their child's hearing impairment, the parent advisor may try to make them feel better by telling them it is not their fault. Instead of accepting these feelings as normal, coping mechanisms, the professional may try to discount them. This attempt to discount feelings of depression and guilt is a coping mechanism used not only by professionals working with the hearing impaired, but also by family members, friends, and professionals in other fields. This happens because depression is the coping mechanism with which the majority of human beings feel the greatest discomfort.

Depression is a feeling state with which many parent advisors become overly empathetic. A parent may sit with slumped shoulders, staring at the floor, saying, "I just don't know what to do anymore. I can't handle this. I can't help anyone." This may overwhelm the parent advisor with feelings of personal and/or professional inadequacy or guilt. However, if the parent advisor can look at depression from a positive, rather than negative perspective, she can convey empathy to the parent without becoming depressed herself. How can the parent advisor view depression in a positive light? Because depression is a feeling state that is uncomfortable for most people, they either deny its existence or work diligently to get out of it. However, depression does give parents a motivation to readjust to their new life; and, they will benefit from having a friend, relative, or professional willing to listen, giving them time to redefine for themselves why they are valuable and capable persons.

Guilt is another uncomfortable feeling state; many individuals spend their lives trying to avoid it. A manifestation of guilt observed in many families is overprotection of the hearing impaired child. The parents do not allow the child to do things of which he is capable. They may postpone toilet training, taking away the bottle, playing outside, or walking. A tremendous need exists for the parents to make sure that they are not responsible for this child enduring any additional pain.

Guilt also can result in positive outcomes. This feeling state may serve as a mechanism for *cleansing the soul* of the parents. They may, in fact, be responsible for their child's hearing impairment. Nine times out of ten, this is not the case; but if it is, feelings of guilt can be brought to the surface and dealt with, though perhaps never completely forgotten. With these extremely uncomfortable feelings out in the open, the parents can begin to implement the suggestions presented by the parent advisor, thus ridding themselves of continued feelings of guilt.

Frustration and Confusion

Frustration and confusion are heightened because 91.7% of parents of the hearing impaired are normal hearing parents (Schein and Delk, Jr., 1974) and typically, have very little information about hearing loss and its ramifications. At the moment of diagnosis, the parents begin a long journey through a variety of conflicting professional opinions about methodology, hearing aids, earmolds, language techniques, kinds of services best for their child, disciplinary techniques, and future school placement decisions. The road is not an easy one as they begin their journey as uninformed consumers of services who must make difficult decisions affecting their child's future life.

Manifestations of frustration and confusion can include anxiety, fear, and tension between the parents. Anxiety, fear and tension can also be at the root of behavior problems observed in the child. A misbehaving child may actually be exhibiting tension between parents. If these feeling states are anxiety-provoking, the child may be filling a need for extra attention whether it be negative or positive. This type of parent-child interaction is also discussed in Information Lesson 1 of the Communication Program (pp. 267–270).

In a positive light, fear and tension can provide the motivation parents need to readjust to this new reality. Symptoms of fear and tension such as lack of sleep, stomach upset, and general irritability are unpleasant states of being. The parent advisor should realize that the length of time some parents experience these feeling states may be much longer than the parent advisor is comfortable with.

A lot of fear and tension can be dissipated by the provision of adequate information. This information may need to be presented several times, in a variety of ways for some parents to truly understand it. The parent advisor may become frustrated and confused because the parent does not seem to integrate the information that has been presented. Some effective ways of presenting information will be discussed later in this section.

Acceptance

Webster defines acceptance as the act of receiving with approval. Dr. James Blair (1981) states, "Acceptance is not necessarily the thing where you say, 'Hey, I'm grateful that I have a hearing impaired child.'" Professionals must remind themselves daily what this parent has been through to arrive at a point of acceptance. The mourning process has had a definite impact on the parents' ability to readjust, reattach, and rebuild. Acceptance does not mean the cessation of the feeling states discussed previously, which never completely disappear and which result in varying levels of acceptance. Some parents become angry when professionals even allude to the thought that they do not totally accept their deaf child. These parents seem involved in their child's program exhibiting what the professional would describe as acceptance. They may be educated parents, who are aware of the mourning process, but who still find themselves harboring feelings of anger, depression, and frustration. Parents of normally hearing children also experience these feelings about their children and their children's futures. Professionals need to realize that acceptance is a feeling state with great promise for the future; but the possibility exists that for every four steps forward, parents may make one step backward. This is perhaps not progress at the rate the professional would prefer, but it is progress nonetheless.

Role of the Parent Advisor

Self-Awareness

To be an effective helper, one must know oneself. Why do I want to help? How can I help? Will what I know help this family? Will what I do not know hurt this family? Do I know the limits of my helpfulness and can I accept those limits? How are my needs being met by my choice of this profession? What are my professional biases and personal values and do I impose these on others who do not share them? Can I tolerate a substandard home environment? Do I like this parent and does this parent want me in the home? Do I assume too much responsibility for the families I serve? Do I expect more of these families than I am capable of doing myself? Can I help everyone I serve?

These are just a sampling of the questions the effective parent advisor should attempt to answer. Introspection may be a frightening experience initially, but it can also be viewed as an adventure. You may choose to embark on an introspective adventure, one which will assist you in identifying your needs, your strengths and weaknesses, and your future potential.

Any adventure provides both excitement and fear; excitement at the possibility of discovering personal potential and fear of uncovering those parts of ourselves that we have buried deeply for our own protection. This adventure may begin by answering the previous questions.

Sometimes merely writing down feelings provides a person with new insight and solutions. At other times, it may simply serve as a means to distance our feelings from our need to protect ourselves. In other words, writing the answers to the above questions can enable us to view, from a distance, our own needs as they relate to our profession. Another suggestion might be to have a person with whom you feel safe, someone who knows you well, also answer the questions and discuss the answers with you. Or, you could discuss your answers with your supervisor if you feel comfortable doing so.

Let's take a look at one of the questions you have answered and its implications for your effectiveness in the home. To answer the question, "How are my needs being met by my choice of this profession?", you first have to determine what your needs are. If you did not specifically determine your needs before answering this question, you might want to do so at this time. Being able to either write or voice your specific needs as they relate to your job is a critical first step in becoming an effective parent advisor. Our personal needs determine how we communicate and respond to others. That is not to say that we are all self-serving people. You may be a very giving, caring, and supportive person, but you may be this way because your needs are met by helping others. You may have identified needs such as having financial security, or wanting to work with children, to feel useful, to feel important, to make good use of your degree, or to help hearing impaired children. Or, you might just say that you have a strong need to feel needed. Whatever your list of needs included, by having defined your own needs you will find yourself better prepared to identify and respond to the needs of the families you serve.

Identifying Your Strengths and Weaknesses

Once you have begun to identify your own needs, examine your strengths and weaknesses and how they impact on your role as a parent advisor. We all have weaknesses just as we all have strengths. Perhaps through introspection, we can look at our weaknesses in new light as Virginia Satir (1978) suggests in the following passage from *Your Many Faces:*

> Many people make an internal scoreboard and judge each face as being either good or bad. Would it sound very bizarre to entertain the idea that each of your faces, no matter how you have judged them in the past, can be used to work for you? They all contain vital energy. (p. 64)

One of the most effective ways to define individual or program strengths and weaknesses is through the simple process of writing them. The forms on pages 43 and 45 have been found to be helpful to both parent advisors and their supervisors in planning for their programs. It is suggested that each parent advisor complete both forms. The parent advisors is given the choice of whether or not to discuss the personal form with her supervisor.

An additional mechanism for identifying your strengths and weaknesses and thus your potential is given by Virginia Satir (1978):

> Make a list for yourself, of all the different faces that you know about, dividing them into those which you label good and those you label bad. Each of your faces, regardless of whether you label it good or bad, holds the seed, the germ, so to speak, of new energy and new uses, something like finding a pretty face under a lot of dirt. I recommend just washing off the dirt and being careful not to destroy the whole face. (p. 64)

Now that you have a clearer picture of your strengths and weaknesses, you may find it easier to answer some of the earlier questions to which you found it difficult to respond. Another parent advisor might also be willing to provide feedback to you regarding your answers, while you could provide feedback for her answers.

PERSONAL STRENGTHS AND WEAKNESSES

YOUR STRENGTHS	YOUR WEAKNESSES

PRIORITIZED GOALS FOR YOURSELF

PLAN FOR ATTAINMENT OF GOALS

PROGRAM STRENGTHS AND WEAKNESSES

PROGRAM STRENGTHS	PROGRAM WEAKNESSES

PRIORITIZED PROGRAM GOALS

PLAN FOR ATTAINMENT OF GOALS

Communication Style

There is much that the parent advisor can learn about adult interaction from the SKI*HI Communication Lessons on parent-child interaction. Perhaps we have become more sophisticated communicators, but the basic premise holds true that what and how one individual communicates affects what and how another individual communicates. The communication signals to which the infant pays the most attention are the same for the adult. They include intonation, facial and body expressions, repetition, simplicity, and looking and talking directly to the child. Take intonation for example; no adult enjoys listening to a monotone speaker. Our facial and body expressions convey as much or more of our intended message than our verbal communications. To communicate effectively, our nonverbal communication must be congruent with our verbal communication. In other words, do not say that it is all right for the dog to lie next to you on the couch, then try to move away from him unnoticed; or to say the smoke from a nearby cigarette does not bother you as tears roll down your face. If you say one thing and mean another, the parents may be astute enough to recognize what you really mean by your nonverbal clues. You also run the risk of the parents' providing their own inaccurate interpretation of your incongruent communication. They may decide that you do not like them or that their home is not good enough for you.

Repetition and simplicity are two important communication signals. We need to remember that we are teaching information which initially seems foreign to many parents. Words such as hertz, decibel, audiogram, air molecule, and cochlea are not common everyday words. The parent advisor would do well to think back to her introductory course in audiology. The information may seem simple now, but it certainly was not then. In addition, most parent advisors had a semester of three classes a week to learn this new information. If the parent advisor finds herself frustrated with the amount of time she spends repeating the same information, she may need to change her presentation style. Could your vocabulary be at a higher level than the parents'? If you were required to sit in a senior medical school class once a week, would you understand the vocabulary and be able to do minor surgery immediately? Repetition and simplicity of information presented are very important to basic learning. No matter what the subject matter, if the information is presented above our heads, we soon learn to effectively tune out the speaker. Some parents we serve, although not completely understanding, may sit quietly, nodding their heads with a smile instead of stopping the presenter to ask for clarification.

The final characteristic, looking and talking directly to the person, probably requires very little explanation. Eye contact tells us this information is for us and that the speaker is interested in our reaction to the presentation. We know we are the reason for this presentation.

Two additional techniques to establish effective communication, not only between the parent and the child, but also between the parent and parent advisor are turn-taking and reinforcement. The parent advisor should be as aware of her own communication style as she is aware of the communication style of the parents. Communication is interaction between people. Most of us do not look forward to sitting down and talking to a tree in the backyard. In addition, very few of us would enjoy listening to other people talk all day without ever saying a word ourselves. Human beings prefer two-way communication. Hopefully, we want to talk some of the time and listen some of the time. Most of us like to have the opportunity to communicate, an outcome of turn-taking behavior, and to be reinforced for our communication. These behaviors encourage us to continue our communication with another person.

Presentation Style

A primary goal of the effective communicator is to establish and deepen rapport. Attempting to match your presentation style with the learning style of the parents is one way to assist the parent advisor in attaining this goal. Considerable discussion concerning learning styles has arisen in the past few years. Are the parents you serve primarily visual learners, auditory learners, or kinesthetic learners? That is, do they need to see and write down information or merely listen to the information and say it to themselves, or do they need to actually "walk through" the material or experience the information to integrate it? Are you as parent advisor matching your presentation style with the parents' learning style? You may present your lesson with visual materials such as flip charts, slide presentations or pictures. Or, you may be the kind of parent advisor who prefers not to use the flip charts but just talks to the parents about the information. People typically present information according to their own learning style needs. Whatever your own learning style, it is important to match your presentation style with the learning style of the parents.

One of the easiest ways to identify the learning style of the parents is to ask them. Many times it seems we professionals continue to look for new and exciting tools to assist us in becoming better communicators when, in reality, honesty is the best tool we have. If we seem to be going nowhere with the parents, why not say, "I feel like I'm not really helping you. Is there something I could change to make this information more meaningful to you?" Or perhaps, the parent advisor is frustrated because the parents are not carrying through with the weekly challenges. Why not ask the parents, "What would you like this program to do for you and your child?" A common response is that the parents want this program to help their child learn to talk. Tell the parents that in order for their child to have the opportunity to talk, he should be wearing his hearing aid one hundred percent of his waking hours, he should be taught to use his residual hearing, and they need to establish effective communication with him. For many SKI*HI parents, this is a primary goal.

You may also be faced with unresponsive parents. No matter how hard you work at getting a response, they just sit and smile, seeming to nod in agreement. In attempting to increase communication between you and the parents, you must look not only at the communication style of the parents, but also at your own communication style and how it may be causing the parents to respond. Remember, the most effective parent advisor is the parent advisor who knows herself. The parent advisor seeking further information about establishing and deepening rapport is referred to Appendix I, Neurolinguistic Programming, on pp. 57–59.

Determining The Needs Of The Family

The parent advisor generally enters a home with a preconceived idea of the needs of the family. Because the family has a hearing impaired child, they will need information about hearing aids, auditory development, communication, and language development. But because the parent advisor becomes involved when the diagnosis is relatively new, the parents may not be ready to deal with the information they need. How can the parent advisor determine the present needs of a family and provide the emotional support necessary to assist them to a point of receptivity to the information she has to present?

In attempting to identify the needs of the family, it is important to remember that as professionals, we are dealing with a family system. To identify the needs of that family, we must understand the needs not only of the mother, father, or hearing impaired child, but also the needs of other significant members including the extended family. True, you may feel it is not part of your job to meet grandmother's needs. You are there to present the SKI*HI lessons to ensure that the hearing impaired child receives the optimum opportunity for growth and development. However, you might find that grandmother makes the decisions in this family; and, if you can meet her needs, she will meet the needs of the parents, who, in turn, will meet the needs of the child. The grandmother may be the key to meeting your needs as a parent advisor. This may seem like a round-about process, but very few family systems are simple in their make-up.

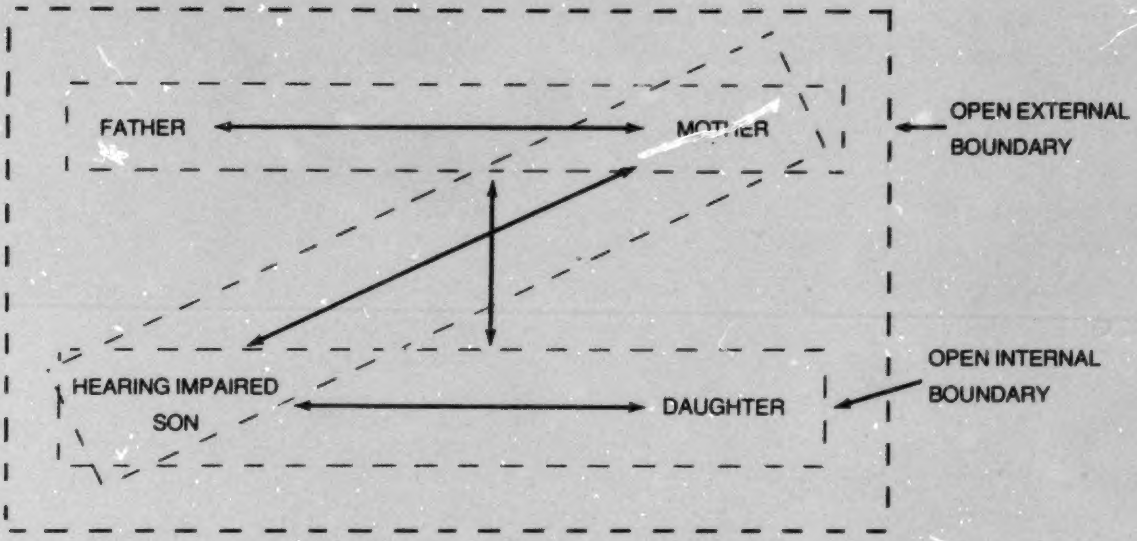
Your own family can serve as a reminder of family complexities. Sometimes problems we identify in the families we serve are the same problems we face in our families. In other words, if a problem is too close to our own home, we not only have to deal with the emotions of the family we are serving, but our own emotions. We also may find our emotions in a heightened state if the family's problems are totally unacceptable to us. Examples of these problems might be wife or child abuse, alcoholism, drug addiction, neglect, malnutrition, or unsanitary conditions of the home.

If you find yourself making general, emotionally-charged statements such as, "I get so depressed when I visit that family."; "I am so angry at that mother."; "They just never carry through."; "I just can't understand that family."; or, "I'm so frustrated!", it may be necessary to take a small step away from this family emotionally and look at what is happening more objectively. Sometimes we assume too much responsibility for the family. In his book, *Counseling Parents of Hearing Impaired Children,* Dr. David Luterman (1979) describes this as the "Annie Sullivan" syndrome.

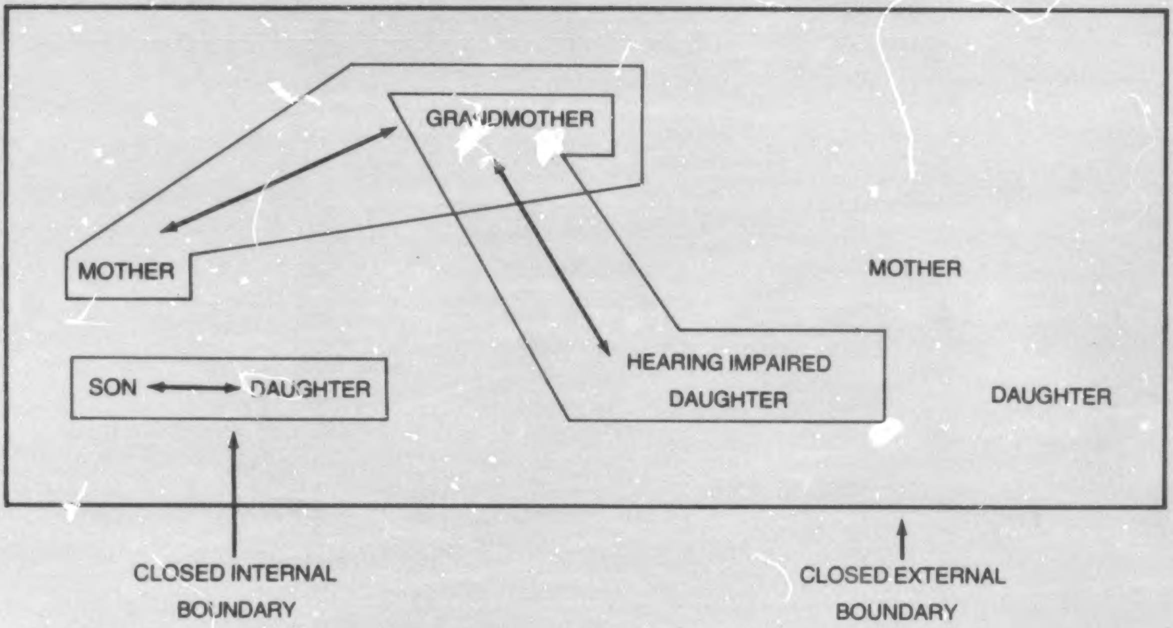
We can set a good example by being comfortable enough to discuss our feelings with parents. But as in any relationship, sometimes we need to take a closer look at the basic problem. The Family Needs Assessment form on p. 53 is another tool to facilitate our understanding of the family's problem. Parent advisors who have used this simple form in the past have found that, once identified, the needs of the family can usually be met in some way. If you find it difficult to write down the feelings or needs of the parents about a problem, you may want to ask the parents directly.

Another tool which may help you better understand a family is to draw a picture of the family, indicating both external and internal family boundaries and whether they are open or closed. Before drawing a picture of the family whose needs you are trying to meet, you might want to draw a picture of your own family as a way of clarifying what you are representing. Two family drawings follow which demonstrate this technique.

FAMILY DRAWINGS



Drawing I. illustrates a family system composed of a father, mother, hearing impaired son and a normally hearing daughter. Both the external and internal boundaries are open in this family. A very strong, but open internal boundary exists between the mother and the hearing impaired son and the remaining family members. Therefore, communication is open between all family members and between the family and outside institutions.



Drawing II. illustrates a family system composed of a grandmother, her two daughters; one having a son and daughter and the other having two daughters, one of whom is hearing impaired. The external boundary is closed between this family and outside institutions. The grandmother and the mother of the two normally hearing children have a special relationship which excludes the other family members. The grandmother also has a closed and special relationship with hearing impaired granddaughter.

Providing Emotional Support To Meet Family Needs

Psychological Growth Assumptions

In providing emotional support to families, there are four basic assumptions which underpin the process of psychological growth. The first assumption is that people create and select experiences. This assumption suggests that an individual selects the experiences that have meaning to him. Thus, what an individual perceives as reality, *is* reality for that individual. Therefore, if a person truly believes that their child will *get over* their hearing loss, the parent advisor cannot change that view. The parents must change their own perception. The parent advisor can only help the parents to have a different set of experiences.

A second assumption is that people seek help as they perceive a difference between where they are emotionally and where they would like to be. Therefore, if I feel that I need help, then I will seek help. The parent advisor is the person most likely to be present when the parents perceive the need to change.

A third assumption is that significant human interaction produces growth. This assumption suggests that as the parents interact with a parent advisor in a significant way, change and growth will be spontaneous.

The fourth assumption is that the parent advisor's role, in providing emotional support, is primarily perceptual rather than behavioral. The primary task then is to let the parents discover their reality for themselves. It is not so much what you do as how you interact and listen that makes the significant difference. Given these assumptions, there are some specific steps that the parent advisor can take to help parents grow.

Establishing Rapport

The first step in providing emotional support to families is to establish rapport. Rapport is an essential component of any positive relationship involving another human being. You already have a variety of tools available to you to facilitate the establishment of this rapport with parents. Some of these tools include your ability to attend to the parents, to exhibit congruent verbal and nonverbal communication, and to empathize with the parents. One additional tool you might consider is matching the process words of the speaker as discussed by Bandler and Grinder (1979) (see Appendix I). Again, you may require some practice and further reading to feel comfortable with this tool.

Rapport cannot be established without attending to the parents. Attending skills include establishing eye contact, talking directly to the parents, observing the parents' facial and body expressions, and observing the impact of your communication on the parents. Your ability to exhibit the above skills can only enhance your ability to be an active listener.

Developing Trust

The development of trust is the second step in providing emotional support to families. Listening is a most important aspect in the development of trust. Listening may seem like a skill we should have naturally since the majority of our own education involved this skill. But, how many of us really paid close attention to every word our professors said? And, how many of us have been carried away, telling another person something important, only to realize they never heard a word we said? Listening may be the most important support tool we possess. Rogers (1961) states:

> . . . that the major barrier to mutual interpersonal communication is our very natural tendency to judge, to evaluate, to approve or disapprove, the statement of the other person, or other group. Real communication occurs, and this evaluative tendency is avoided, when we listen with understanding. What does this mean? It means to see the expressed idea and attitude from the other person's point of view, to sense how it feels to him, to achieve his frame of reference in regard to the thing he is talking about (p. 331).

The majority of parents we serve have the ability to solve their own problems if they have someone they can trust to listen to their concerns. Although their solutions may not be your choices, they can still be viable solutions.

FAMILY NEEDS ASSESSMENT

SITUATION	PROBLEM	PARENT'S FEELINGS	PARENT'S NEEDS	PROVIDER

You might think about the process you and a very close friend went through to establish your relationship. You probably met, realized you had some things in common, had discussions about those commonalities; and then, as you began to trust each other, you disclosed small secrets. When the secrets were not laughed at but remained between the two of you, you both began to risk more and more. There can be a similar process which happens with you and the parents you serve. Trust can be encouraged when your nonverbal and verbal behaviors are congruent; you clearly say what you mean, and what you say fits your actions. Your demonstrating the truth of statements you make to the family can be very important.

Your ability to empathize with the parents' feelings is also necessary to establish trust in relationships. Empathy is understanding to the point of not being afraid to "feel" with the other person, thus sharing your commonalities.

APPENDIX I

NEUROLINGUISTIC PROGRAMMING

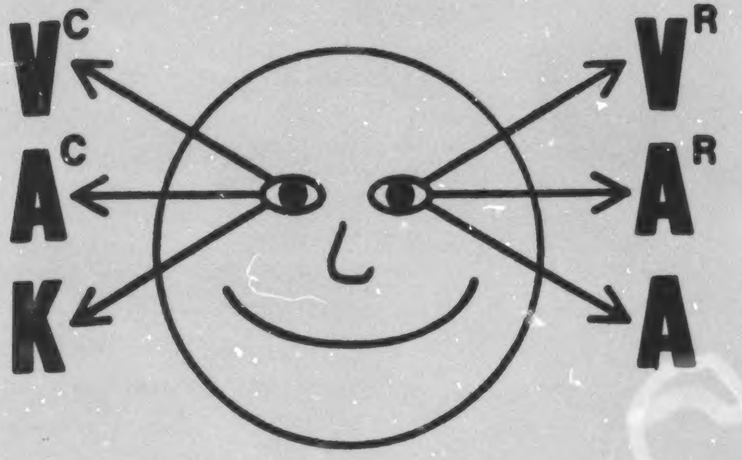
The parent advisor may gain insight from a therapeutic model termed Neurolinguistic Programming (NLP). Neurolinguistic Programming is a therapeutic model of human communication and behavior developed by Richard Bandler, John Grinder, Leslie Cameron-Bandler and Judith DeLozier. This model was developed through the systematic study of what Bandler and Grinder (1979) term therapeutic "wizards" such as Milton Erickson, Fritz Perls and Virginia Satir. Because the parent advisor is typically not a trained therapist, this model will not be discussed in detail. Only what Bandler and Grinder (1979) term representational systems will be briefly discussed to provide the parent advisor with additional information to better understand her communication style.

Human beings communicate in different ways, primarily through the three senses: vision, hearing, and feeling or kinesthetics. Bandler and Grinder (1979) provide the following information regarding representational systems:

> When you make initial contact with a person, he will probably be thinking in one of these three main representational systems. Internally he/she will either be generating visual images, having feelings, or talking to themselves and hearing sounds. One of the ways you can know this is by listening to the kinds of process words (the predicates: verbs, adverbs, and adjectives) that the person uses to describe his experience. If you pay attention to that information, you can adjust your own behavior to get the response you want. If you want to get good rapport, you can speak using the same kind of predicates that the other person is using. If you want to alienate the other person, you can deliberately mismatch predicates. (pp. 14 and 15)

Bandler and Grinder (1979) also use visual accessing cues or eye scanning patterns to assist in determining the client's representational system. To facilitate a better understanding of visual accessing cues, Bandler and Grinder (1979) provide the following diagram:

VISUAL ACCESSING CUES FOR A "NORMALLY ORGANZIED" RIGHT-HANDED PERSON



V^C Visual constructed images.

V^r Visual remembered (eidetic) images.

(Eyes defocused and unmoving also indicates visual accessing.)

A^C Auditory constructed sounds or words.

A^r Auditory remembered sounds or words.

K Kinesthetic feelings (also smell and taste).

A Auditory sounds or words.

The information about identifying representational systems of clients through listening to the client's processing words and observing eye scanning patterns presented by Bandler and Grinder can assist the parent advisor in determining her own style of communication and the style of the parents. Does the parent communicate using visual processing words such as see, look, view, show, picture, focus, or watch; or auditory processing words such as hear, say, tell, talk, discuss, praise, listen, verbalize, yell or describe; or kinesthetic processing words such as feel, reach, touch, push, talk, attach, support, or handle? Does the parent say, "I see what you're saying.", "Thanks for telling me.", or, "I feel I can handle that."?

The visual accessing cues can really best be used to help the parent advisor understand herself. You might want to sit down with a friend, another parent advisor, or your supervisor and take turns asking each other questions. Do your eyes go up and to the left or right and remain unmoving in response to most questions? In this case, you are accessing most of your information visually. Or, do your eyes shift to the right or the left or left and down in response to most questions? in this case, you are accessing more of your information auditorily. Or, do your eyes move to the right and down in response to most questions? In this case, you are accessing most of the information kinesthetically.

A word of caution is necessary in interpreting this information. Listening to processing words and observing eye scanning patterns are only some of the many tools available to you to facilitate a better understanding of your communication style and the learning style of the parents you serve. The information about these two tools presented in this section is very brief compared to the information utilized by the trained therapist. The parent advisor interested in further reading can refer to the *Reference and Reading List* which follows.

Reference and Reading List

Bandler, R. & Grinder, J. (1975). *The structure of magic I.* Palo Alto, California: Science and Behavior Books.

Bandler, R. & Grinder, J. (1979). *Frogs into princes.* Moab, Utah: Real People Press.

Becvar, R. J. (1974). *Skills for effective communication.* New York: John Wiley and Sons.

Blair, J. (1981). "Assisting parents through the mourning process." Department of Communicative Disorders. Utah State University, Logan, Utah.

Egan, G. (1977). *You and me: The skills of communicating and relating to others.* Monterey, California: Brooks/Cole.

Grinder, J. & Bandler, R. (1976). *The structure of magic II.* Palo Alto: Science and Behavior Books.

Grinker, R. R. (Ed.). (1969). *Psychiatric diagnosis, therapy and research on the psychotic deaf.* Washington, D.C.: Division of Research and Demonstration Grants, Social and Rehabilitation Service, Department of Health, Education and Welfare.

Haley, J. (Ed.). (1971). *Changing families: A family therapy reader.* New York: Grune and Stratton.

Lewis, A., Morrow, J. & Melville, C. (1977). *Introduction to family intervention participant manual.* Atlanta, Georgia: Training Resource Center, Georgia Mental Health Institute.

Luterman, D. (1979). *Counseling parents of hearing impaired children.* Boston: Little, Brown and Company.

Mindel, E. D. & Vernon, M. (1971). *They grow in silence.* Silver Spring, Maryland: National Association of the Deaf.

Moses, K. (1984). *Relating to parents.* Presentation made in Little Rock, Arkansas, March 1, 1984.

Murphy, A. L. (Ed.). (1979). *The families of hearing impaired children.* The Volta Review *81*: No. 5.

Rogers, C. R. (1961). *On becoming a person.* Boston: Houghton Mifflin.

Satir, V. (1978). *Your many faces.* Millbrae, California: Celestial Arts.

Schein, J. D. & Delk, M. L. Jr. (1974). *The deaf population of the United States.* Silver Spring, Maryland: National Association of the Deaf.

Schlesinger, H. S. & Meadow, K. (1972). *Sound and sign.* Berkeley, California: University of California Press.

UNIT 3

HOME VISIT PLANNING, DELIVERY, AND REPORTING

Introduction

This section covers three general areas:

- (a) Planning the home visit
- (b) Delivering the home visit
- (c) Reporting (SKI*HI assessment and evaluation)

Each area will be discussed in detail in the following pages.

Planning The Home Visit

Preparing a lesson plan for a home visit is challenging. Home visits that are not well planned often become nothing more than social visits. However, a pre-written lesson plan cannot anticipate circumstances in the home when the visit is made. The plan needs to have planned activities and procedures, but at the same time, it must allow for spontaneous events in the home that can be as or more effective than the planned activities. The following guidelines should be tempered with the parent advisor's knowledge of the child and the family. Home parent-child programming allows for complete individualism.

In preparing for a home visit to a family, the parent advisor should do the following:

- (a) Consider the needs or ideas that came up during the last home visit (it may be helpful to write down needs and ideas as they arise during the home visit or immediately after the home visit).
- (b) Note the child's auditory, communication and language levels.
- (c) Note the specific levels of parent competence; consider the parent's style of interacting with their child.
- (d) Review specific developmental skills in the various home programs (auditory, communication, language, etc.).
- (e) Check last week's lesson plan and challenges.
- (f) Using the lesson format and steps in teaching on pages 67 and 68, write the plan for the home visit keeping in mind each of the above.

It is suggested that the parent advisor use the lesson plan on page 65. Some programs may also want to use the "Lesson Narrative Report" which is on page 66. This is not the child and parent data report (which is called the SKI*HI Data Sheet and is forwarded to the University of Virginia;

see discussion of this under Reporting on pp. 70–87). Rather, it is narrative information that the supervisor may want to know about the child, the parents, and the home visit or information the parent advisor may want to maintain in the child's file. It is suggested that the lesson plan and the lesson narrative report be used in one of two ways:

Suggestion #1

First Form

Front	Back
Lesson Plan and Lesson Narrative Report	SKI*HI Data Sheet

(See sample of this on pages 63 and 64.)

It is suggested that this form be sent to the supervisor each week with a duplicate copy kept by the parent advisor. The supervisor then copies the SKI*HI Data Sheet side for submission to the University of Virginia (SKI*HI Data Sheet discussed on pages 70–87.)

Second Form

Keys to SKI*HI Data Sheet

(See page 74.)

Parent advisor keeps this key form with her and uses it each week to fill-out the SKI*HI Data Sheet.

Suggestion #2

First Form

Front	Back
Lesson Plan	Lesson Narrative Report

(See sample of this on pages 65 and 66.)

It is suggested that this form be sent to the supervisor each week with a duplicate copy kept by the parent advisor.

Second Form

Front	Back
SKI*HI Data Sheet	Keys to SKI*HI Data Sheet

(See sample of this on pages 73 and 74.)

This is the form submitted to the University of Virginia.

PARENT-INFANT PROGRAM
LESSON PLAN AND LESSON NARRATIVE REPORT

HOME VISIT PLAN

Child ______________________ Parent Advisor ______________ Parent ______________ Visit # ________ Date ______________

I. SUBJECT AREA:	OBJECTIVES	ACTIVITIES	MATERIALS	VOCABULARY
1. __________				
2. __________				
3. __________				

LESSON NARRATIVE REPORT

I. HEARING AIDS: Functional:

	Yes	No
Right		
Left		

Wearing Aids:

	Yes	No	Max. Time	Down	Time Not Worn
One H/A					
Two H/A					

II. EARMOLDS: Problems Noted: ______________________________ Remakes Made: ______________________________

III. ENTRIES/CHALLENGES: Parent Notebook Entries: Yes _____ No _____ Experience Book: Yes _____ No _____ Challenges Completed: Yes _____ No _____

IV. HOME VISIT NARRATIVE REPORT:

V. CHALLENGES:

VI. PROBLEMS/HELP NEEDED FROM SUPERVISOR:

Child's Name:______________________________

SKI*HI DATA SHEET

DEMOGRAPHICS-I

1. Site Prefix (3 letters)__________ 2. Child ID #__________ 3. Date of birth__________ 4. Sex__________ 5. Program Start Date__________ 6. Date of ID__________ 7. Other handicaps__________
8. Date Hearing Aid Fit__________ 9. One or Both Parents Deaf: Yes / No (circle one) 10. Date of Suspicion__________ 11. Type of Loss: Sensori-neural / conductive / mixed (circle one) 12. Cause of Loss__________
13. Date of "Cause" if Occurred after Birth__________ 14. Race__________ 15. Language Spoken in the Home__________

DEMOGRAPHICS-II (Fill in at program initiation and thereafter whenever additions/changes are made):

1. Hearing Loss (dB numerical values; use best ear; circle if ave. of 2 frequencies or less):

Test Date	Unaided dB	Test Date	Aided dB

2. Communication Methodology: Date Begun:

Diagnostic/prescriptive __________
Aural-Oral __________
Total Communication __________
Other __________ __________

3. Other Non-Parent Infant Program Services: Date Begun:

__________ __________
__________ __________
__________ __________
__________ __________
__________ __________

4. Frequency of Home Visits: Date Begun:

( ) twice a week __________
( ) once a week __________
( ) every other week __________
( ) other__________ __________

5. Graduation Date __________

TEST DATA (Write down scores and dates of tests)

[illegible]:

Test Date	RA	EA

(highest month in age interval)

Other Tests:

Test name	Test Date	Results

CHILD DATA (Slash item if no longer reporting. Leave blank if child not yet achieved.) (Visit #)	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____	#____
	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
Time Hearing Aid Worn. Begin recording after H.A. Prog. initiated. Write # of appropriate time interval. See back. Discontinue (slash) when child achieves 100%.																	
Auditory Development Begin recording after Aud. Prog. initiated. Write highest level child achieves (1-11). See back.																	
Communication-Language Development Begin recording after Comm. Prog. initiated. Write highest level child achieves (1-12). See back. Write # of appropriate vocabulary interval. See back. Discontinue (slash) when child has over 300 words.	Communication-Language Level:																
	Vocabulary:																
PARENT DATA (Begin recording after each program initiated. Slash item if no longer reporting. Leave blank if not yet achieved.)	Hearing Aid Skills: Visit # parent achieves 80-100% on hearing aid competency test:__________																
New Auditory Skills acquired (1-11). See back.																	
New Communication Skills acquired (1-15). See back.																	
New Aural-Oral Language Skills acquired (1-9). See back.																	
New Total Communication Skills acquired (1-30). See back.																	
New Cognition Skills acquired (1-12) Optional. See back.																	

BEST COPY AVAILABLE

PARENT INFANT PROGRAM
LESSON PLAN

Child ____________________ Parent Advisor ____________ Parent ____________ Visit # ______ Date ____________

	OBJECTIVES	ACTIVITIES	MATERIALS	VOCABULARY
1. ________				
2. ________				
3. ________				

LESSON NARRATIVE REPORT

I. HEARING AIDS: Functional:

	Yes	No
Right		
Left		

Wearing Aids:	Yes	No	Max. Time	Down	Time Not Worn
One H/A					
Two H/A					

II. EARMOLDS: Problems Noted: ____________________ Remakes Made: ____________________

III. ENTRIES/CHALLENGES: Parent Notebook Entries: Yes ____ No ____ Experience Book: Yes ____ No ____ Challenges Completed: Yes ____ No ____

IV. HOME VISIT NARRATIVE REPORT:

V. PROBLEMS/HELP NEEDED FROM SUPERVISOR:

VI. CHALLENGES:

Delivering The Home Visit

Introduction

Parent advisors in home intervention face a unique challenge: how to facilitate parents' learning of skills and concepts in an effective way so that these skills and concepts become a natural integral part of the family's life. An important concept which will help the parent advisor meet this challenge is to remember that parents are persons. They are persons who have needs for certain information and skills but who have many other aspects of their lives to consider and attend to. Parents are not just machines into which information is fed, who are then expected to act upon that information in set ways. If the parent advisor is to be effective, she must make the parents partners in a two-way interactive process in which the parents play an important role in actively acquiring information and skills in their own ways. The parent advisor facilitates this acquisition. This approach to teaching parents combines well-known concepts of interpersonal communication and adult education.

As the parent advisor begins working with a family, she must make an effort to get to know the parents who will be the targets of her teaching. She must ask herself, "What do these parents want to know, how do the parents want to learn it, and how will the parents learn it best?" Then she must determine how to convey information and skills in a way that the parents will find meaningful and practical.

General Teaching Strategies

There are some generally applicable guidelines and strategies that parent advisors can keep in mind as they deliver all of the curricular programs of the SKI*HI Model. These will be presented in the following discussion. Specific suggestions applicable in particular programs or lessons will be presented with those programs. With all of these suggestions, the parent advisor must keep in mind the individual parent she is teaching.

Lesson format. All of the lessons throughout the SKI*HI curriculum manual are presented in a consistent format for parent advisor use. This format includes outline/parent objectives, materials needed, lesson content, review questions for parents, sample activities and challenges, and teaching suggestions specific to the skill or topic. The parent advisor need only refer to these helps and make adaptations for each child and family.

In general, the home visit should be about 60 minutes in length. At the beginning of each home visit, the parent advisor should: (a) check the child's aid as appropriate, (b) review last week's discussion and challenges as appropriate, (c) obtain information from the parents for the SKI*HI Data Sheet.

Steps in teaching. The parent advisor should follow the SKI*HI teaching procedure. This procedure has proven to be very effective, as it incorporates the parent advisor's imparting of information and skills with the parent's hands-on involvement and reinforcement.

Steps in teaching parents a skill:

1. Parent advisor describes the skill: what it is, why it is important, and how it applies to the particular child.
2. Parent advisor models the skill using the hearing impaired child.
3. Parent carries out the skill with the child.
4. Parent advisor reinforces specific things parent does well.
5. Parent advisor and parent discuss parent's experience with the skill, such as how the parent felt about doing it, how the parent would have done it differently, and other situations where the skill can be used.
6. Challenge (write specific things parents will do during the week and leave with parents; see page 101).

Guidelines for effective home visits. In carrying out the teaching steps, there are several guidelines the parent advisor can remember.

1. Keep parent and child objectives in mind during the visit; it will be easier to keep the lesson and activities moving and keep distractions from intruding. Remember that the activities and challenges that are used to achieve the objectives must be adapted according to the child's age and abilities as well as the parents' capabilities, routines, and interests. Even the objectives themselves must be applied in light of what is realistic for the child and family. Consider what the child can already do and build on that.

2. Use the suggested materials when possible. Before the visit, assemble the materials and become comfortable with their use. During the visit, use the materials in a positive way as they will enhance the presentation and the parents' understanding of the concepts being taught.

3. The lesson contents have been arranged in a logical grouping of concepts and skills. The parent advisor may wish to break some of the larger lessons down into smaller segments presented over a series of weeks. She may, on the other hand, find that some lessons contain information or skills already acquired by certain parents, or not applicable because of the age or status of the child. She may wish to combine the information from two lessons into one, presenting it more briefly in order to reinforce the parent for skills already acquired and to provide additional information that the parent does not yet have. It is important to provide this type of reinforcement to the parents and to bring to their attention the desirability of their continuing to do the things they are doing well. If the lesson is not applicable at the present time, the parent advisor may decide to use it in an order different from that presented in the manual, or in some cases may decide to eliminate the lesson if it is not applicable at all.

4. In order to present information in the most effective way to the parent, the parent advisor must be thoroughly familiar with the content in advance. She should *not read* the information to the parent. The parent advisor can use the parent objective outlines which appear at the beginning of each lesson, or may write up an individualized outline to take into the home in order to ensure that all important concepts are included.

5. Devote a good portion of each visit to modeling and parent practice of new skills. Do not allow the visits to become largely discussion sessions. The parents will learn the concepts best by putting them into practice.

6. Make an effort to have the parents personally involved in every aspect of the visit. As information is presented, ask the parents for examples of its application to their child. Pause to allow the parent to comment or ask questions. Review information and ask parents questions about what they have learned. Involve parents in setting goals, in planning activities and challenges, and in planning what will be done at the next visit. The parent advisor must remember that parents must first have the desire to learn the concepts and skills she has to teach, and that if they are not involved in the setting of goals, there is a possibility that the goals set may not seem meaningful to them. If the goals are not meaningful, the parents may have difficulty in working on related activities and challenges. In addition, involving parents in planning will ensure that the activities selected will fit their family's routines and interests.

7. In deciding upon activities, remember to use naturally occurring situations and materials found in the home, teaching the parents to make optimal use of these. It may be advisable at times to help the parents enrich the home environment by adding to the experiences and materials available. The parent advisor's suggestions must be made in light of what is realistic and affordable for each family, but at the same time the parent advisor can encourage parents to be creative with what is available.

8. Involve both mother and father, as well as siblings and other significant persons in the teaching process. The mother is usually the main "significant other" in the child's life. Therefore, the greatest amount of time in the home intervention program is usually spent with the mother. However, if there are more "significant others" in the child's life, these others should be involved in the home intervention program. It takes considerable effort to involve others. Involving father will often have to be a deliberately planned event. Few fathers will become naturally involved; however, most fathers will become more involved if the parent advisors have a definite plan to involve them. Parent advisors should plan several visits when the father can be there. As a rule, do not ask the mother to teach the father. If the parent advisor is hesitant to work with the father, work towards rapport. Establish a good working relationship with the father as well as the mother. Work with the mother and father together on regular home intervention procedures. Plan a few special sessions exclusively for the father and child. Work with the father in special "Dad" activities that he likes to do with the child. Leave challenges for the father.

Siblings often feel left out or neglected because of all the attention and time the handicapped child receives. When there are young children in the family, they should be included in the activities as much as possible. In many instances, they will be delighted to do the same things the hearing impaired child is doing. For all siblings, both young and old, specific visits should be planned to work with them exclusively. Specific auditory and language activities can be planned to teach the sibling how to communicate with the hearing impaired brother or sister. Thus, the home will become a more meaningful language environment.

Special activities can be planned to involve others outside the immediate family. Most "others" are eager to learn to communicate with the hearing impaired child and will attend special sessions to learn to do so.

9. Do not make the home visit a social call. It is deleterious to the parent advisor/parent relationship for the parent advisor to stay in the home and chat about whatever topic comes up. The parent advisor/parent relationship should be warm and friendly but professional.

Reporting: SKI*HI Assessment and Evaluation

Overview of SKI*HI Assessment and Evaluation

An important feature of the SKI*HI Model is assessment and evaluation. Parent advisors who assess and report child and parent progress will be able to:

(a) Determine specific needs of parents and children and determine parent advisor course of action. This is the area of *assessment.* For example: How many waking hours each day does the child wear his hearing aids? Does more time need to be spent on assisting the parents to help the child wear the hearing aid during all waking hours? What are the child's language gains? If language gains are not being made, should action be taken to alter the program?

(b) Determine the effectiveness of their particular program. This is the area of *evaluation.* SKI*HI Outreach provides personnel in each replication site with a report on the progress of all the children in their program so they will know if their children are making gains. In addition, they receive information comparing the gains of their children with those of other children in the United States who are in the SKI*HI Network.

The reporting of data involves two main components:

1. Determining Child Progress (page 70) and Determining Parent Progress (page 71)

→

2. Completing and Submitting the "SKI*HI Data Sheet" (pages 71–84)

These two components will be discussed in detail below. After parent advisors submit the SKI*HI Data Sheet, their programs will receive a local and national parent and child progress report. The interpretation and use of this report will also be discussed below.

Determining Child Progress

Parent report. The first way the parent advisor determines the progress of the child is by parent report. Parents record the progress of their child on three checklists (Hearing Aid Wearing Time Checklist, Auditory Development Checklist, and Communication-Language Checklist) and report this information to the parent advisor each week. These checklists are in the Parent Notebook on pages 103–113. Parents take the checklists out of the Parent Notebook and put them on the refrigerator or some other obvious place to remind them to watch for the child's behavior and then check the appropriate behavioral level on the checklist. It is suggested that just prior to the home visit, the parent should date the checklist(s) that are currently being used and then check the highest level of the child's behavior in the appropriate box. For example, the parent would enter the date on the Auditory Development Checklist and then check the "attending" box if the child's highest auditory behaviors during the preceding week were attending behaviors. Parents should be encouraged to write down examples of the child's auditory and communication behaviors during the week. This simple requirement of having parents check one or two boxes per week should promote parent record keeping.

The Hearing Aid Wearing Time Checklist is used by the parents after the initiation of the Hearing Aid Program. Parents use the Auditory Development Checklist after initiation of the Auditory Program and the Communication-Language Checklist after the initiation of the Communication Program.

After parents have completed a checklist, it is put back into the Parent Notebook in the appropriate section. A complete description of the entire Parent Notebook is on pages 89–157.

Parent advisor observation supplements and reinforces parent observation and report. Parent advisor observation may be particularly important where parent report is not forthcoming or where the reliability of parent report is questionable. In such cases, parent advisors should be particularly aware of the child's behaviors during the home visit and then discuss these behaviors with the parents, coming to a mutual agreement about what specific child behaviors should be reported.

Administration of tests. The second way parent advisors determine child progress is by the administration of tests. The Language Development Scale (LDS) should be given at least twice a year. More frequent administrations are encouraged but left up to the discretion of replication site personnel. Other tests such as the SKI*HI Receptive Language Test may be given to the children in the program but are optional. Complete instructions for administering and scoring the Language Development Scale and the SKI*HI Receptive Language Test are published with these tests and are available from: SKI*HI Institute, UMC 10, Utah State University, Logan, UT 84322.

Determining Parent Progress

All SKI*HI lessons are written in terms of parent objectives. For example, the Total Communication Lesson 4 objectives are: Parents will use the skill of sign simplicity by (a) using total communication telegrams, (b) using signs that are easily formed, functional, and iconic. The lesson itself is a specific description of how parents will fulfill these objectives.

In order to determine if parents have learned a particular skill (such as sign simplicity), the parent advisor should go back to the objective *after* the skill has been taught to the parent and then ask the following questions: "Has the parent demonstrated accomplishment of this objective (as specifically described in the lesson) by (a) modeling back the skill to me after I have modeled the skill to the parent or (b) spontaneously performing the skill during the home visit or (c) reporting use of the skill during the preceding week." If skill use is reported by parents, parent advisor observation should supplement this report if possible.

Completion and Submission of the SKI*HI Data Sheet

General Instructions. As soon as a child begins the program, the SKI*HI Data Sheet should be kept on the child. This is done in the following way: During (or after) each home visit, the parent advisor makes appropriate child and parent progress entries on the SKI*HI Data Sheet (see form on page 73). Programs may duplicate this form for their own use. The parent advisor also records demographic and test data on this form. Some demographic data are filled in at program initiation. Other demographic data entries are filled in both at program initiation and thereafter whenever additions or changes are made. This SKI*HI Data Sheet is the *only* form that SKI*HI Outreach requires for replication site personnel to complete and submit for data analysis of children in the SKI*HI Network. All replication sites must complete and submit the demographic data portion of the Data Sheet. Completion and submission of the test data and child and parent data are optional but strongly encouraged.

During (or after) the home visit, the parent advisor makes appropriate entries for that week on the SKI*HI Data Sheet (this constitutes a master form for each child). There is room on this master data sheet for at least four months of home visits (17 weeks). After one master form is completed, a second one is started and so forth. The parent advisor can insert a carbon and another data sheet under her master form (or can xerox the master form) for weekly submission to her supervisor. See page 62 for two suggestions on how the SKI*HI Data Sheet can be used and submitted to the supervisor in conjunction with the Lesson Plan and Lesson Narrative Report.

Once each year in May, parent advisors or supervisors are required to send copies of the *master data sheets* on each child to:

SKI*HI Data Manager
Evaluation Research Center
School of Education, Ruffner Hall
University of Virginia
405 Emmet Street
Charlottesville, VA 22903
(804-924-0511)

Submission of three forms per child will be necessary on children who received 12 months of home visit services during the preceding year (4 months of visits per form). For children receiving less than 12 months of service, fewer forms per child will be necessary.

The SKI*HI Data Sheet is self explanatory. Keys on the back of the form enable parent advisors to make appropriate entries on the front of the form. However, in case there are specific questions about the completion and submission of the SKI*HI Data Sheet, detailed instructions are given on pages 77–84 under the title "Step-By-Step Guide To Completion and Submission of SKI*HI Data Sheet."

This step-by-step guide has been summarized below for parent advisors who would like a quick reference to all data collection and submission procedures:

Child's Name:____________________________

SKI*HI DATA SHEET

DEMOGRAPHICS-I

1. Site Prefix (3 letters)__________ 2. Child ID #__________ 3. Date of birth__________ 4. Sex__________ 5. Program Start Date__________ 6. Date of ID__________ 7. Other handicaps__________
8. Date Hearing Aid Fit__________ 9. One or Both Parents Deaf: Yes / No (circle one) 10. Date of Suspicion__________ 11. Type of Loss: Sensori-neural / conductive / mixed (circle one) 12. Cause of Loss__________
13. Date of "Cause" if Occurred after Birth__________ 14. Race__________ 15. Language Spoken in the Home__________

DEMOGRAPHICS-II (Fill in at program initiation and thereafter whenever additions/changes are made):

1. Hearing Loss (dB numerical values; use best ear; circle if ave. of 2 frequencies or less):

Test Date	Unaided dB	Test Date	Aided dB

2. Communication Methodology:

	Date Begun:
Diagnostic/prescriptive	________
Aural-Oral	________
Total Communication	________
Other __________	________

3. Other Non-Parent Infant Program Services:

Program Services:	Date Begun:
__________	________
__________	________
__________	________
__________	________
__________	________

4. Frequency of Home Visits:

	Date Begun:
( ) twice a week	________
( ) once a week	________
( ) every other week	________
( ) other________	________

5. Graduation Date ________________

TEST DATA (Write down scores and dates of tests)

LDS: (highest month in age interval)

Test Date	RA	EA

Other Tests:

Test name	Test Date	Results

CHILD DATA (Slash item if no longer reporting. Leave blank if child not yet achieved.)

(Visit #)	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___	#___
	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
Time Hearing Aid Worn. Begin recording after H.A. Prog. initiated. Write # of appropriate time interval. See back. Discontinue (slash) when child achieves 100%.																	
Auditory Development Begin recording after Aud. Prog. initiated. Write highest level child achieves (1-11). See back.																	
Communication-Language Development Begin recording after Comm. Prog. initiated. Write highest level child achieves (1-12). See back. Write # of appropriate vocabulary interval. See back. Discontinue (slash) when child has over 300 words.	Communication-Language Level:																
	Vocabulary:																

PARENT DATA (Begin recording after each program initiated. Slash item if no longer reporting. Leave blank if not yet achieved.)

Hearing Aid Skills: Visit # parent achieves 80-100% on hearing aid competency test:__________

New Auditory Skills acquired (1-11). See back.																	
New Communication Skills acquired (1-15). See back.																	
New Aural-Oral Language Skills acquired (1-9). See back.																	
New Total Communication Skills acquired (1-20). See back.																	
New Cognition Skills acquired (1-12) Optional. See back.																	

BEST COPY AVAILABLE

SKI*HI Data Sheet Key

CHILD DATA

Time Hearing Aid Worn

1. Less than ¼ time
2. ¼ - ½ time
3. ½ - ¾ time
4. Over ¾ time
5. All of the time

(Discontinue reporting when child wears aid 100% of time or recommended hearing aid wearing time during any week.)

Auditory Development

1. Attending
2. Early Vocalizing
3. Recognizing
4. Locating
5. Vocalizing w / inflection
6. Distances / levels
7. Producing vowels / consonants
8. Environmental discrim. and comp.
9. Vocal discrim. and comp.
10. Speech discrim. and comp.
11. Speech use

Communication-Language Development

1. Aware of surroundings, faces and / or voices
2. Pre-babbles (coos, gurgles, etc.)
3. Babbles or gestures
4. Understands single words or signs
5. Uses single words or signs
6. Uses jargon
7. Understands 2 word or sign sequences
8. Uses 2 word or sign sequences
9. Understands 3-4 word or sign sequences
10. Uses 3-4 word or sign sequences
11. Understands compound / complex sentences
12. Uses compound / complex sentences

Vocabulary Interval

1. 0-5 words
2. 6-10 words
3. 11-20 words
4. 21-30 words
5. 31-50 words
6. 51-100 words
7. 101-200 words
8. 201-300 words

(Discontinue reporting when child has over 300 words.)

PARENT DATA

New Auditory Skills

1. Attending
2. Early vocalizing
3. Recognizing
4. Locating
5. Vocalizing w / inflection
6. Distance / levels
7. Producing vowels / consonants
8. Environmental discrim. and comp.
9. Vocal discrim. and comp.
10. Speech discrim. and comp.
11. Speech use

New Cognition Skills

Parent helps child:

1. Assimilate and accommodate (lesson 2)
2. Learn object permanence (lesson 3)
3. Develop goal direction (lesson 3)
4. Learn about space (lesson 4)
5. Learn about causality (lesson 4)
6. Integrate all senses (lesson 4)
7. Attach symbols to objects and mental representations (lesson 5)
8. Distance self from objects (lesson 5)
9. Engage in symbolic play (lesson 5)
10. Form concepts (lesson 6)
11. Learn about order (lesson 6)
12. Learn how to generalize (lesson 6)

New Communication Skills

1. Minimize background noise
2. Encourage child to explore and play
3. Serve as communication consultant
4. Use interactive turn-taking
5. Get down on child's level
6. Maintain eye contact / direct conversation
7. Use facial expressions
8. Use intonation
9. Use gestures
10. Touch child
11. Respond to child's cry
12. Stimulate babbling
13. Respond to communication intents
14. Use conversational turn-taking
15. Use meaningful conversation

New Language Stimulation Skills: Aural-Oral

1. Conversation in child care activities
2. Conversation in parent task activities
3. Conversation in child initiated activities
4. Conversation in parent directed activities
5. Selection of target words and phrases
6. Increased frequency
7. Reinforcement
8. Expansion
9. Naturalness

Total Communication

1. Use gestures (lesson 2)
2. Respond to baby's gestures (lesson 2)
3. Use t.c. telegrams (lesson 4)
4. Emphasize iconic, easily shaped, functional signs (lesson 4)
5. Increase frequency of functional signs (lesson 5)
6. Emphasizes signs appropriate for child's language and visual development (lesson 5)
7. Reinforce child's signing attempts (lesson 6)
8. Sign consistently to child in child care activities (lesson 7)
9. Sign consistently to child in parent task activities (lesson 7)
10. Sign consistently to child in child initiated activities (lesson 7)
11. Sign consistently to child in parent directed activities (lesson 7)
12. Sign consistently during home visit (lesson 8)
13. Sign consistently when child present but conversation not directed to child (lesson 9)
14. Use animation in t.c. (lesson 10)
15. Use speech effectively in t.c. (lesson 10)
16. Use affixes and noncontent signs (lesson 10)
17. Know how to get the child to watch the signer (lesson 10)
18. Know how to correct child's signing mistakes (lesson 10)
19. Know how to sign when hands are full (lesson 10)
20. Know how to involve reluctant family members, friends and relatives in t.c. (lesson 10)

Data Collection and Submission Quick Reference

Step 1

Complete demographic Section I of SKI*HI Data Sheet at program initiation. Complete Demographic Section II at program initiation and thereafter when additions/changes are made.

Step 2

Explain parent notebook to parents (see pages 89–157). Have parents put parent notebook checklists in an obvious place (ex: refrigerator door) and check highest level of child's behavior for preceding week. When particular checklist is completed, have parents put it back in the Parent Notebook.

Step 3

Obtain child progress data (from parent checklists and parent advisor observation) and record highest level of child's behavior on Master SKI*HI Data Sheet during each home visit. Record parent progress data. A carbon and another data sheet may be inserted underneath the master data sheet for submission to supervisor (or a xerox copy may be submitted).

Step 4

Submit copy of SKI*HI Data Sheet weekly to supervisor (and as appropriate, Lesson Plan and Lesson Narrative Report).

Step 5

Administer Language Development Scale (LDS) to child at least twice yearly and record date and results on SKI*HI Data Sheet. Administer and report on other tests as appropriate.

Step 6

Once each year in May submit SKI*HI Data Sheets to the University of Virginia. There are 4 months of home visit data per sheet so as many as 3 SKI*HI Data Sheets per child will be required on those children who received a full year of home visits.

Step-By-Step Guide to Completion and Submission of SKI*HI Data Sheet

Step 1

Complete Demographic Section I of SKI*HI Data Sheet at program initiation. Complete Demographic Section II at program initiation and thereafter when additions/changes are made.

Demographic Data - I. Parent advisor fills in Demographic - I (fixed data) only once at program initiation. All dates should be written in numbers: month/day/year. For example, a program start date of June 4, 1985 is written 6/4/85.

1. **Site Prefix:** Each SKI*HI replication agency is assigned a 3-letter prefix (for example, GAA is Georgia's prefix and NDX is North Dakota's prefix). Enter the site's assigned prefix.
2. **Child ID Number:** Each child in a program is assigned a 3 digit number (for example, the sixteenth child to be assigned a number in a particular program is 016). Enter the child's ID number.
3. **Birthdate:** Write birthdate in numbers. For example, a birthday of July 6, 1985 is written 7/6/85.
4. **Sex:** Write M for male, F for female.
5. **Program start date:** The program start date is the month, day and year that *any* parent-infant program services were first given by the SKI*HI program. Examples are the date the coordinator spends time on the first telephone contact, the day the parent advisor visits the home and collects background information, or the first date of any home visit.
6. **Date of ID:** Identification is defined as first report from an audiologist indicating a hearing loss.
7. **Other handicaps:** Check yes if the child has a handicap, other than a hearing loss, which has been professionally confirmed.
8. **Date hearing aid first fit:** Write the date in numbers (month,day, year) when an aid, either trial or permanent, was first fit by any agency.
9. **One or both parents deaf:** Circle yes if one or both parents living in the home are hearing impaired.
10. **Date of suspicion:** Suspicion: Record the date the parents first suspected the hearing loss. If parents did not suspect any hearing loss before formal identification, record the identification date.
11. **Type of loss:** Circle only one of the types. Mixed implies both sensori-neural and conductive types of loss.

83

12. **Causes of loss:** For cause write the one from the following list that best describes the cause of the hearing loss.

1) unknown
2) hereditary
3) maternal rubella, CMV, or other infections during pregnancy
4) meningitis
5) defects at birth
6) fever or infections in child
7) RH incompatibility
8) drugs during pregnancy
9) other conditions during pregnancy
10) middle ear problems or ENT anomalies
11) drugs administered to child
12) birth trauma
13) child syndrome
14) other (specify)

13. **Date of cause:** If cause occurred after birth (e.g., meningitis, infection, child's reaction to drugs, or middle ear problems), enter the date of occurrence. If hearing loss present at birth, leave blank.

14. **Race:** Write child's race from the following (parental provision of this information is optional):

1) Caucasian
2) Black
3) Oriental/Asian American
4) Spanish American
5) American Indian
6) other (specify)

15. **Language spoken in the home:** Indicate what primary language is spoken in the home from the following list:

1) English
2) Spanish
3) American Sign Language
4) Signed English System
5) other (specify)

Demographics - II.

Parent advisor fills in Demographics - II (changing data) at program initiation and thereafter whenever new information is available. Dates should be written in numbers: month/day/year.

1. **Hearing loss:** Report the hearing sensitivity of the child in numerical dB values. Do not use categorical words. Use the child's best ear. If the average of two frequencies or less is reported,

circle that number. If the average of three or more frequencies is reported, do not circle that dB value. Make sure to indicate test date in numbers: month/day/year.

2. **Communication Methodology:** When the child first enters the parent-infant program, check the communicative placement and give date. Diagnostic/Prescriptive refers to the first few months of the child's enrollment in the program when no decision has yet been made as to auditory or total communication placement. During this time, evaluation data is being collected to aid in making this decision. By the end of the Communication Program, a communication method decision should be made, if possible. The child then begins the Language Stimulation Program: Aural-Oral or the Language Stimulation Program: Total Communication. The parent advisor should be sure to note when the child changes from diagnostic-prescriptive to an aural-oral or a total communication language program. When the child is placed in or changed to a specific methodology, give the date the family begins to use that method with the child.

3. **Other Non-Parent-Infant Program Services:** List and date the initiation of other non-parent-infant program services (other than diagnostic) given to the child and family while child is in the parent- infant program. List services by category as shown below:

   a. educational (e.g., preschool, day care, kindergarten)
   b. speech and hearing therapy
   c. mental health (e.g., parent counseling, child therapy)
   d. health (e.g., free clinics, public health nurse, nutritional services)
   e. social (e.g., welfare, aid to dependent children, family services)
   f. services for mentally retarded
   g. other (specify)

4. **Frequency of Home Visits:** Check the one that best describes the current visiting schedule.

5. **Graduation Date:** Put the date in numbers (month,day, year) of the child's graduation from the parent infant program.

Step 2

Explain parent notebook to parents (see pages 89–157). Have parents post parent notebook checklists in an obvious place and check highest level of child's behavior for preceding week. When particular checklist is completed, have parents put it back in the Parent Notebook.

Step 3

Obtain child and parent progress data and record on the SKI*HI Data Sheet during or after each home visit. It is suggested that the parent advisor take one SKI*HI Data Sheet (which becomes the parent advisor's master copy for that child) and then insert a carbon and another data sheet underneath the master for weekly submission to the supervisor. Or the parent advisor may xerox the master data sheet for the supervisor. The parent advisor retains the master copy for continued data entry.

Before recording child and parent data, the parent advisor should enter the home visit date in numbers (month/day/year) and the home visit number (1, 2, 3, 4 ... etc.). For example, the first home visit made to a home on Nov. 3, 1985 reads: Visit 1 on 11/3/85. When beginning a new data sheet, the first home visit number entered will be the next higher number after the last entry on the previous sheet. If the parent advisor goes to the home and the family is not there, date the home visit *but do not write in a new home visit number.* Then write "no show" across the blank lines below.

Child Data.

On all child data, slash the item ☒ if no longer reporting the item. Leave the item blank if the child has not yet achieved a new skill. For example, if the child has not yet begun the Auditory Program, leave the auditory development item blank. Or if the child achieves an auditory level of 4 one week but *does not achieve a new auditory level the next week* leave the next week blank.

1. **Time Hearing Aid Worn:** Begin recording weekly after initiating the Home Hearing Aid Program. Using the SKI*HI Data Sheet Key, write down the number of the appropriate time interval (as determined from the parent's entry on the Hearing Aid Wearing Time Checklist from the Parent Notebook). If the child does not achieve a new time interval during a particular week (for example, the child stays at 1/4 - 1/2 of the time), leave the current week blank. When the child wears the aid all of his waking hours or the hearing aid time recommended by the audiologist, discontinue reporting by slashing item on data sheet.

2. **Auditory Development:** Begin recording weekly after the Auditory Program is initiated. Using the SKI*HI Data Sheet Key, write down the number of the *highest* auditory level the child achieves during the week (as determined from the parent's entry on the Auditory Development Checklist from the Parents Notebook). The parent advisor will want to discuss with the parents the parent's entry on the Auditory Development Checklist and then using the guide below, make a final decision as to the auditory level that should be checked on the SKI*HI Data Sheet.

Determining The Child's Auditory Achievement Level

For Auditory Skills 1, 3, 4, and 6, achievement of a particular level is determined by the child's responding, without auditory clues (see page 394), to three or more different sound stimuli at a 50% or higher consistency level during a series of meaningful presentations of each sound. For example, the child is on the "locating" level if he can localize half the time without clues to three or more sounds (e.g., knocking, his name being called, electrical appliance) during a series of meaningful presentations of each sound (e.g., Mother knocks five times on kitchen cabinet while she is cooking and child responds three times).

For Auditory Skills 8, 9, and 10, achievement of a particular level occurs when the child is making more than 50% of his auditory responses on that level. For example, if most of the child's responses are discriminations of vocal sounds, words, or phrases, the child is on auditory level 9. For achievement of vocal skills (auditory skills 2, 5, 7, and 11), the child should be making 50% or more of his vocalizations on that level. If the child does not acquire a new auditory level (auditory level for current week is the same as the preceeding week), leave blank.

3. **Communication-Language Development:** Begin recording after *Communication Program* is initiated.

(a) **Language level:** Using SKI*HI Data Key, write down the number of the highest language level the child achieves during the week (as determined from the parent's entry on the Communication-Language Checklist from the Parent Notebook). The parent advisor should discuss the parent checklist entry with the parents and verify it if possible. If the child does not acquire a new language level (level for current week is same as preceding week), leave blank.

(b) **Vocabulary count:** Using the Key, write down the number of the appropriate vocabulary interval (as determined from the parent's entry on the Communication-Language Checklist from the Parent Notebook). The parent advisor should discuss with parents their entry on the Communication-Language Checklist. Using the following guide, the parent advisor can make a final decision as to what new vocabulary words should be counted for entry on the SKI*HI Data Sheet.

What Constitutes A New Vocabulary Word

Count as a new word, a morpheme that is distinguishable as a word and has been used spontaneously (not imitatively) by the child more than once. If the word is so misarticulated that it is not recognizable as a word (child says ma or makes an unrecognizable or unrelated sign as he points to a doggie) do not count it as a morpheme (word). If the child understands one morpheme (cat) but uses it in an over-generalized manner to refer to any furry animal with four legs and a tail, only one morpheme will be counted (the verbalized or signed cat is very different from the word dog).

If the child says a morpheme /bä-bä/ for bottle and another morpheme /bä-bē/ for baby, the parents can "hear" the differences and will note the presence of two morphemes. Similarly, if the child signs a close approximation for father and a slightly different but distinguishable approximation for boy, the parent will note the presence of two morphemes. If the child utters one morpheme /bä-bä/ in many different situations, such as when the child wants his /bä-bä/ (bottle), waving and saying /bä-bä/ (bye-bye) or pointing to a /bä-bä/ (baby), the parent will know the child has *three* morphemes if:

1. There is a close approximation of the uttered word to the real word (/bä-bä/ to bye-bye or /bä-bä/ to baby) *and,*

2. If there is a strong indication of the child's knowing the three words because of (a) gestural clues such as waving and saying /bä-bä/ or pointing or reaching for a /bä-bä/ (bottle) or (b) environmental clues (whenever mother gives the child a bottle the child says /bä-bä/ or whenever the child sees a baby the child says /bä-bä/).

This principle can also be applied when the child is using signs. For example, the child may use the same squeezing or wrist-twisting motion for milk, orange, and ice cream, but indications may be that he knows and distinguishes the three different words.

If the child utters /bä-bä/ or makes one sign indiscriminately as a generalized response to many events or objects (points to many things and makes the sign or says /bä-bä/) only one morpheme will be counted. If the child uses two words together such as /allgone/ or /allwet/ that represent one meaningful unit, only one morpheme will be counted.

If during a particular week the child does not achieve a new vocabulary count interval (for example, child stays at 21-30 words), leave the space for that week blank. When the child has more than 300 words, discontinue recording by slashing item on the data sheet.

Parent Data.

On all parent data, slash the item ⧄ if no longer reporting the item. Leave the item blank if the parent has not achieved new skills. For example, if the Language Program has not been initiated, leave the new language skills item blank. Or if the parent achieves language skills 1 and 2 during a preceding week and no new skills for the current week, leave the current week blank.

1. **Hearing Aid Skills:** Begin recording after initiation of the Home Hearing Aid Program. Write down *only once*, the *number of the home visit* during which the parent receives 80-100% on the hearing aid competency test. The competency test is in hearing aid lesson 9 and is on pages 231–234. For example, if the parent achieves 80-100% on the competency test during visit 10, write down 10. Discontinue reporting by slashing this item after the parent achieves 80-100% on the competency test.

2. **New Auditory Skills:** Begin recording after initiation of the Home Auditory Program. Using the SKI*HI Data Sheet Key, write down the number(s) of all new skills the parent acquired during the home visit or preceding week. (See page 71 for complete description of determining parent progress.) If the parent achieves *no* new auditory skills during a particular week (for example, the parent achieves auditory skills 3 and 4 during a preceding week but achieves no new skills during the current week), leave the space for the current week blank.

3. **New Communication Skills:** Begin recording after initiation of the Home Communication Program. Using the Key, write down the number(s) of all new skills the parent acquires during the home visit or preceding week. (See page 71 for complete description of determining parent progress.) If the parent achieves *no* new communication skills during a particular week (for example, the parent achieves communication skill 3 and 4 during a preceding week but achieves no new skills during the current week), leave the space for the current week blank.

4. **New Language Stimulation Skills: Aural-Oral:** Begin recording after initiation of the Language Stimulation Program: Aural-Oral. Using the Key, write down the number(s) of all new skills the parent acquires during the home visit or preceding week. (See page 71 for complete description of determining parent progress.) If the parent achieves *no* new language skills during a particular week (for example, the parent achieves language skills 2 and 3 during a preceding week but achieves no new skills during the current week), leave the space for the current week blank. Leave blank if the family is using Language Stimulation Program: Total Communication.

5. **New Language Stimulation Skills: Total Communication:** Begin recording after initiation of the Language Stimulation Program: Total Communication. Using the Key, write down the number(s) of all new skills the parent acquires during the home visit or preceding week. (See page 71 for complete description of determining parent progress.) If the parent achieves *no* new total communication skills during a particular week (for example, the parent achieves total communication skills 7 and 8 during a preceding week but achieves no new skills during the current week), leave the space for the current week blank. Leave blank if the family is using Language Stimulation Program: Aural-Oral.

6. **New Cognition Skills (optional):** Begin recording after initiation of the Home Cognition Program. Using the Key, write down the number(s) of all new skills the parent acquires during the home visit or preceding week. (See page 71 for complete description of determining parent progress.) If the parent achieves *no* new cognition skills during a particular week (for example, the parent achieves cognition skills 1 and 2 during a preceding week but achieves no new skills during the current week), leave the space for the current week blank.

Step 4

Submit the carbon or xerox copy of the SKI*HI Data Sheet weekly to the supervisor. It is possible that the copy sent to the supervisor will also contain the Lesson Plan and Lesson Narrative Report if *suggestion 1* on page 62 is being used. If *suggestion 2* is being used, the parent advisor may be required to send to the supervisor both the Lesson Plan and Lesson Narrative Report (one form) and the SKI*HI Data Sheet (another form). In some programs, submission of the Lesson Plan and Narrative Report Form may not be required or may eventually be phased out if the parent advisor and supervisor deem it appropriate. However, it is suggested that the parent advisor continue to make written lesson plans and narrative reports for her own use even if she is not submitting them to her supervisor.

Upon receipt of the carbon copies, the supervisor reviews parent and child progress, responds to any parent advisor comments, and files the report chronologically in the child's file.

Step 5

Administer LDS to child *at time of entry into the program* and twice yearly. Record date and results on SKI*HI Data Sheet. Administer and report on other tests as appropriate.

Language Development Scale (LDS): Parent advisor records LDS test scores and dates whenever the LDS is given. Children in SKI*HI replication sites should receive the test at least twice a year. More frequent administrations are encouraged. *The first administration of the LDS must take place within the first three months of the child's enrollment in the program.* This first administration constitutes the pretest. The earlier the first administration can be given, the greater the likelihood of demonstrating child progress.

Parent advisor should record the child's receptive and expressive ages (RA and EA). These ages will be the *highest age* in months of the highest interval achieved (for example, if the child's receptive age interval is 20-22 months, the RA would be recorded as 22 months). Parent advisors should make sure to date all test administrations in numbers: month/day/year.

Other tests: Administrations of tests (other than the LDS) are optional. All test administrations must be dated. If the SKI*HI Receptive Language Test is given, enter the child's percentage scores for Parts A, B, C, and D. If the child does not respond, enter a 0.

Step 6

Once each year in May submit SKI*HI Data Sheets on each child in the program to the University of Virginia. There are 4 months of home visit data per sheet so as many as 3 SKI*HI Data

Sheets per child will be required on those children who receive a full year of home visits. For children receiving fewer months of services, fewer forms will need to be submitted.

A call will come from the SKI*HI Data Bank Manager (University of Virginia) in *April* to remind replication site personnel to submit copies of their SKI*HI Data Sheets in *May*. The program should *cut off the child's name at the top of the SKI*HI Data Sheet to ensure anonymity of the data,* make copies of all data sheets kept on each child since the previous May's submission, and send the copies to:

SKI*HI Data Manager
Evaluation Research Center
School of Education, Ruffner Hall
University of Virginia
405 Emmet Street
Charlottesville, VA 22903
(804) 924-0511

In small programs that do not have a supervisor, the parent advisor will need to follow the above procedures to submit data on her children.

At the SKI*HI Data Center in Virginia, all data will be analyzed. Reports will be sent to replication site personnel describing the progress of parents and children in the entire SKI*HI Network and in their particular site if more than 10 children are served. In order to help replication site personnel interpret and use these reports, the section below is given.

National Report

This report is sent to all SKI*HI replication sites. It contains child and parent progress data and demographic information. The sections of a typical national report are here described.

The first section of the report gives some background information on the report and what is included in it (the number of children and the number of sites covered in the report).

The second section (child and service description) is a summary of descriptive information about all SKI*HI children. Information for this section comes from the demographic sections of the SKI*HI Data Sheet. The following explanations will help in interpreting this section.

1. It is possible that the number of *valid cases* is less than the number of children included in the national report. This is because certain items of information are not noted or are not available on some children (for example, maybe test information but not demographic information is available on some children).

2. Percents are found by dividing the number of children with a certain characteristic by the total number of valid cases. For example, the percentage of children with other handicaps is found by dividing the number of children with other handicaps, i.e. 226, by the total number of valid cases, say 789, which then equals 29%.

3. When *unknown* is reported (such as the cause of hearing loss), it means that the information is unknown (i.e., the cause is unknown) not that the information is unavailable.

4. *Mean dB loss* gives the average hearing loss reported for different test methods. *Standard deviation,* sometimes abbreviated as S.D., is a measure of how much variation there is in the

information used to calculate the mean. If *every* child has a hearing loss of 73 dB when tested by the soundfield method, then the standard deviation would be *0.* If the S.D. is *20,* this means that most children have a loss within a range of 20 dB more or less than the average or between 53 dB and 93 dB. This tool helps to compare children in a particular site to children in the nation as a whole. If the children in one site have an average loss of 89 dB, then they are more severely impaired than the national average but within the standard deviation range expected by the national profile.

Min. dB loss shows the smallest reported hearing loss while *Max. dB loss* shows the highest.

5. Means and related standard deviations can be used in the same way as described above for such items as age hearing loss identified and age hearing aid fitted.

6. Remember that some demographic data varies over the course of service to the family. This data includes the child's hearing loss in dB, communication method used, supplementary services provided, and frequency of home visits.

The next section of the national report concentrates on language change. Language development as measured by the Language Development Scale (LDS) is reported in the tables in this section. Since notations on these tables may be unfamiliar to some readers, a sample table is presented and discussed below.

Sample Table

Pre/Post Test Comparisons of LDS Scores and Language Development Quotients; Receptive Ability

Pre/Post	Valid Pairs	Mean	S.D.	t-value
	LDS Scores in Months			
First Testing	330	15.6	10.9	15.2*
Spring 1983	330	27.4	14.5	
Fall 1982	285	21.5	12.9	11.7*
Spring 1983	285	28.6	14.5	
	Developmental Quotients			
First Testing	304	0.62	0.30	5.46*
Spring 1983	304	0.67	0.31	
Fall 1982	262	0.62	0.33	4.31*
Spring 1983	262	0.70	0.34	

*p < .05

Pre/Post information is information from before something happens (pre) and after something happens (post). The information in this case is performance on the LDS. The something that happens is home visits by the trained SKI*HI parent advisor. In one comparison in this table, the Pre is the first LDS test the child received and the Post is the child's Spring 1983 test. In another comparison, the Pre is the child's Fall 1982 LDS test and the Post is the Spring 1983 test. The goal is for language performance to improve between these two times.

Valid Pairs shows the number of children with LDS scores both Pre and Post. For statistical accuracy one has to compare the *same* children before and after SKI*HI treatment. As discussed above, the *mean* is the average and *S.D.* shows how much variation exists in the numbers used to find the mean. The *t-value* is derived from comparing the Pre/Post pairs on each of the children. The larger the t-value, the more likely it is that the Pre and Post measurements are different. The * indicates that t-values of this size would occur by chance alone only 5 times out of 100. This probability value ($p < .05$) is a commonly accepted criterion for saying there is a *statistically significant difference* between two means.

Another way of looking at Pre/Post gains is to subtract the Pre score from the Post score and look at this difference in light of how many months are between the Pre and Post. For example, the Fall 1982 Pre score is 21.5 and the Spring 1983 Post score is 28.6. This is a difference of 7.1 months over a 6 or 7 month period (Fall 1982 to Spring 1983). This is good language progress in that it is what one would expect from a hearing child.

Developmental Quotients are calculated because between the Pre and Post test, something happens in addition to the SKI*HI parent advisor's visits; i.e. the child gets older. The child's age is taken into account as part of the calculation for the Development Quotient (the language age is divided by the chronological age). The quotient can be thought of as a ratio or percent. For example, the Fall 1982 Development Quotient of .64 can be interpreted as the average language age being 64% of the average chronological age. The Spring 1983 quotient of .70 indicates that this percent improves over time. By showing that the t-values are statistically significant for these quotients, it becomes apparent that language scores are changing despite the fact that ages are changing too.

Since all t-values in this sample table are statistically significant, it is obvious that change occurs between Pre and Post. These SKI*HI children are making language progress.

Local Site Report

SKI*HI replication sites with at least 10 valid cases receive a local site report as well as the national report. This report includes information on children only at the local site. However, the same format as the national report is followed. Look at the site report side by side with the national report, noting all differences. If data from a local site is worse than the national data, it may mean that there are local programming problems, or if the local data are better than the national data, it may indicate a superior local program. It is advisable to remember the following when noting national and local differences and drawing conclusions:

(a) Younger children served will have lower LDS scores on the average.

(b) More severely impaired children will probably have lower LDS scores compared to mildly impaired children of the same age.

(c) Remember that an average calculated from fewer valid cases may not be as reliable a measure. Look at the national means based on many cases. Subtract and add one standard deviation to it as suggested. If local site data are beyond these boundaries, careful attention should be given to the special features of the local site.

PARENT'S NOTEBOOK

Introduction

Objectives

1. To provide a means whereby the parents may monitor and record their child's growth.
2. To assist the parent advisor in identifying the needs of the parents in relation to their child.
3. To help the parent advisor keep data and evaluate the program

Description

Every parent will be provided with a looseleaf notebook. This notebook will remain the personal property of the parent. Parents will be asked to record weekly the child's hearing aid usage, auditory and communication-language development, and if desired, aspects of child growth and development.

This information will allow the parents to review the progress made by the child, will serve as a support to other parents beginning their observations of their younger children, and provide vital data to project personnel.

The notebook is divided into sections including personal information, lesson summary and challenge sheets, hearing aid wearing time checklist, auditory development checklist, communication-language development checklist, a developmental guide, and parent resource information.

Training

The parent advisor will provide an orientation and training for the parents on how to use the notebook. Samples of skills and developmental information will be provided to serve as a guide for the parents. The notebook will serve as a means of training parents in utilizing a more systematic approach to observing and teaching their child.

Programs may use the following pages for masters for duplicating Parent Notebook contents for all parents served by their program.

Section I

Personal and Program Information

Parents may want to record personal information about their child and information about the parent-infant program for easy access. This section will include such information as birth record, description of the child at birth, hearing impairment, date enrolled in the parent-infant program, names, addresses and phone numbers of parent advisor, audiologist, and other resource people.

PERSONAL AND PROGRAM INFORMATION

Child's Name: ______________________________

Birthdate: ______________________________

Date enrolled in Parent-Infant Program: ______________

Name, address, and phone # of Program: ______________

____

____

____

____

Parent Advisor

Parent Advisor Name: ______________________________

Parent Advisor Address: ______________________________

____

Parent Advisor Phone #: ______________________________

The name of my child's audiologist is: __________

address: __________

phone #: __________

The name of my child's ear, nose, and throat doctor (ENT) is: __________

address: __________

phone #: __________

Other names, addresses, and phone # s: __________

My child's hearing aid(s) is/are: __________

(brand name & model number)

The hearing aid serial number(s) is/are: __________

The battery size is: __________

Dates of hearing evaluations:

1. __________ Notes: __________
2. __________
3. __________
4. __________

CHILD'S BIRTH RECORD

Mother's Name: ______________________________

Father's Name: ______________________________

Time Child Was Born: ______________________________

Doctor's Name: ______________________________

Hospital: ______________________ City ______________

State: ______________________ Zip ______________

DESCRIPTION OF CHILD AT BIRTH

Color of eyes: ______________

Color of hair: ______________

Weight - lbs.: __________ ounces: __________

Height: ______________

Hearing Impairment Identified: ______________
(date)

98

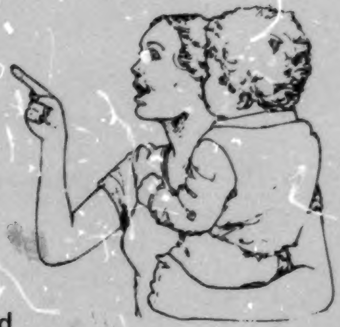
Section II

Lesson Summary and Challenge Sheets

At the conclusion of each lesson, parents will be given a lesson summary and challenge sheet. These sheets are available in notepad form from SKI*HI Institute. The parent advisor simply tears off the appropriate lesson summary sheet from the notepad, writes challenges or has the parent write the challenges on it that are designed to facilitate the development of the child, and then gives the sheet to the parents to post in an obvious place. In this way, parents are frequently reminded of the previous lesson and of the challenges they are to fulfill during the week. All SKI*HI lessons are summarized on these notepad sheets. If a new lesson is not given during a particular home visit, the parent advisor can use the lesson summary sheet given at the previous home visit to write down new challenges for the upcoming week.

After a new lesson summary and challenge sheet is given to the parent, the old one is inserted in Section II of the Parent Notebook for easy reference.

SAMPLE OF LESSON SUMMARY AND CHALLENGE SHEET



Communication Skill Lesson 9
Use Natural Gestures

What are the goals of this lesson?

TO USE NATURAL GESTURES:

1. to add meaning to my communication with my child
2. to help my child better understand what I am saying
3. to encourage my child's use of gestures

TO REWARD MY CHILD'S USE OF GESTURES

Challenges	How did my child react or respond?
1.	
2.	
3.	
4.	

Do I feel comfortable with this skill? What changes, if any, did I see in my child as I used it? How can I continue to use this skill as my child progesses?

Section III

Hearing Aid Wearing Time

Blank *Hearing Aid Wearing Time Checklists* are available in this section. Parents are given a blank checklist to post in an obvious place in the home. Parents then record the child's hearing aid wearing time on the checklist.

After parents have completed the Hearing Aid Wearing Time Checklist (which has entry space for 12 weeks), the parents put it back into this section of the Parent Notebook. If appropriate, a new checklist is then posted in an obvious place in the home and parents continue to record the child's hearing aid wearing time until the child is wearing his aid during all waking hours or the amount of time recommended by the audiologist.

HEARING AID WEARING TIME CHECKLIST

Check how much of the child's waking hours the aid was worn during the week. Stop recording when child wears aid *all* his/her waking hours or the recommended hearing aid wearing time.

CHECK ONE BOX PER WEEK:	**LESS THAN ¼ TIME**	**¼ — ½ TIME**	**½ — ¾ TIME**	**OVER ¾ TIME**	**ALL TIME**
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐
Week: ____________ **(Date)**	☐	☐	☐	☐	☐

Section IV

Auditory Development

Blank *Auditory Development Checklists* are available in this section. The parents post this checklist in an obvious place in the home. Each week the parents check the child's highest auditory development level (noting specific examples if possible) on the checklist. After the checklist is completed, it is put back into this section of the Parent Notebook and a new auditory checklist is posted in the home for recording of the child's auditory progress.

BEST COPY AVAILABLE

AUDITORY DEVELOPMENT CHECKLIST

Check highest level child achieves during the week and write down some examples. Write month, day and year for each week.

	Week of ____ date	Week of ____ date	Week of ____ date	Week of ____ date
PHASE I	☐ 1. ATTENDING (child aware of presence of home and/or speech sounds but may not know meanings; stops, listens, etc.) ex. ____	☐ 1. ATTENDING ex. ____	☐ 1. ATTENDING ex. ____	☐ 1. ATTENDING ex. ____
	☐ 2. EARLY VOCALIZING (child coos, gurgles, repeats syllables, etc.) ex. ____	☐ 2. EARLY VOCALIZING ex. ____	☐ 2. EARLY VOCALIZING ex. ____	☐ 2. EARLY VOCALIZING ex. ____
PHASE II	☐ 3. RECOGNIZING (child knows meaning of home and/or speech sounds but may not be able to locate; smiles, when hears Daddy home, etc.) ex. ____	☐ 3. RECOGNIZING ex. ____	☐ 3. RECOGNIZING ex. ____	☐ 3. RECOGNIZING ex. ____
	☐ 4. LOCATING (child turns to, points to, locates sound sources) ex. ____	☐ 4. LOCATING ex. ____	☐ 4. LOCATING ex. ____	☐ 4. LOCATING ex. ____
	☐ 5. VOCALIZING WITH INFLECTION (high/low, loud/soft and/or up/down) ex. ____	☐ 5. VOCALIZING WITH INFLECTION ex. ____	☐ 5. VOCALIZING WITH INFLECTION ex. ____	☐ 5. VOCALIZING WITH INFLECTION ex. ____
PHASE III	☐ 6. HEARING AT DISTANCES AND LEVELS (child locates sounds far away and/or above and below) ex. ____	☐ 6. HEARING AT DISTANCES AND LEVELS ex. ____	☐ 6. HEARING AT DISTANCES AND LEVELS ex. ____	☐ 6. HEARING AT DISTANCES AND LEVELS ex. ____
	☐ 7. PRODUCING SOME VOWELS AND CONSONANTS ex. ____	☐ 7. PRODUCING VOWELS/CONSONANTS ex. ____	☐ 7. PRODUCING VOWELS/CONSONANTS ex. ____	☐ 7. PRODUCING VOWELS/CONSONANTS ex. ____
PHASE IV	☐ 8. ENVIRONMENTAL DISCRIMINATION AND COMPREHENSION (child hears differences among and/or understands home sounds) ex. ____	☐ 8. ENVIRONMENTAL DISCRIM. AND COMP. ex. ____	☐ 8. ENVIRONMENTAL DISCRIM. AND COMP. ex. ____	☐ 8. ENVIRONMENTAL DISCRIM. AND COMP. ex. ____
	☐ 9. VOCAL DISCRIMINATION AND COMPREHENSION (child hears differences (a) among vocal sounds, (b) among words, or (c) among phrases and/or understands them) ex. ____	☐ 9. VOCAL DISCRIM. AND COMP. ex. ____	☐ 9. VOCAL DISCRIM. AND COMP. ex. ____	☐ 9. VOCAL DISCRIM. AND COMP. ex. ____
	☐ 10. SPEECH SOUND DISCRIMINATION AND COMPREHENSION (child hears differences among and/or understands distinct speech sounds) ex. ____	☐ 10. SPEECH SOUND DISCRIM. AND COMP. ex. ____	☐ 10. SPEECH SOUND DISCRIM. AND COMP. ex. ____	☐ 10. SPEECH SOUND DISCRIM. AND COMP. ex. ____
	☐ 11. SPEECH USE (child imitates and/or uses speech meaningfully) ex. ____	☐ 11. SPEECH USE ex. ____	☐ 11. SPEECH USE ex. ____	☐ 11. SPEECH USE ex. ____

Section V

Communication-Language Development

This section provides blank *Communication-Language Checklists* and a place for parents to keep completed Communication-Language Checklists. The checklist has a place for parents to make weekly notations about the child's communication-language level and the number of new vocabulary words the child acquires.

COMMUNICATION—LANGUAGE DEVELOPMENT CHECKLIST

Check highest communication level child achieves during the week and write down some examples. Discontinue recording "Number of New Words Used" when child has over 300 words.

Week of ______ date	Week of ______ date	Week of ______ date	Week of ______ date
Communication Level:	**Communication Level:**	**Communication Level:**	**Communication Level:**
1. ☐ Aware of surroundings and faces and/or voices ex. ______	1. ☐ Aware ex. ______	1. ☐ Aware ex. ______	1. ☐ Aware ex. ______
2. ☐ Pre-babbles (facial expressions, coos, gurgles, etc.) ex. ______	2. ☐ Pre-babbles ex. ______	2. ☐ Pre-babbles ex. ______	2. ☐ Pre-babbles ex. ______
3. ☐ Babbles and/or gestures ex. ______	3. ☐ Babbles/gestures ex. ______	3. ☐ Babbles/gestures ex. ______	3. ☐ Babbles/gestures ex. ______
4. ☐ Understands single words (signs) ex. ______	4. ☐ Understands single words ex. ______	4. ☐ Understands single words ex. ______	4. ☐ Understands single words ex. ______
5. ☐ Uses single words (signs) ex. ______	5. ☐ Uses single words ex. ______	5. ☐ Uses single words ex. ______	5. ☐ Uses single words ex. ______
6. ☐ Uses jargon (jabber) ex. ______	6. ☐ Uses jargon ex. ______	6. ☐ Uses jargon ex. ______	6. ☐ Uses jargon ex. ______
7. ☐ Understands 2-word (sign) sequences ex. ______	7. ☐ Understands 2-word sequences ex. ______	7. ☐ Understands 2-word sequences ex. ______	7. ☐ Understands 2-word sequences ex. ______
8. ☐ Uses 2-word (sign) sequences ex. ______	8. ☐ Uses 2-word sequences ex. ______	8. ☐ Uses 2-word sequences ex. ______	8. ☐ Uses 2-word sequences ex. ______
9. ☐ Understands 3-4 word (sign) sequences ex. ______	9. ☐ Understands 3-4 word sequences ex. ______	9. ☐ Understands 3-4 word sequences ex. ______	9. ☐ Understands 3-4 word sequences ex. ______
10. ☐ Uses 3-4 word (sign) sequences ex. ______	10. ☐ Uses 3-4 word sequences ex. ______	10. ☐ Uses 3-4 word sequences ex. ______	10. ☐ Uses 3-4 word sequences ex. ______
11. ☐ Understands compound/complex sentences (connected with "and", "or", "but", etc.) ex. ______	11. ☐ Understands compound/complex sentences ex. ______	11. ☐ Understands compound/complex sentences ex. ______	11. ☐ Understands compound/complex sentences ex. ______
12. ☐ Uses compound/complex sentences ex. ______	12. ☐ Uses compound/complex sentences ex. ______	12. ☐ Uses compound/complex sentences ex. ______	12. ☐ Uses compound/complex sentences ex. ______
Number of New Words Used:	**Number of New Words Used:**	**Number of New Words Used:**	**Number of New Words Used:**
1. ☐ 0-5 ex. ______	1. ☐ 0-5 ex. ______	1. ☐ 0-5 ex. ______	1. ☐ 0-5 ex. ______
2. ☐ 6-10 ex. ______	2. ☐ 6-10 ex. ______	2. ☐ 6-10 ex. ______	2. ☐ 6-10 ex. ______
3. ☐ 11-20 ex. ______	3. ☐ 11-20 ex. ______	3. ☐ 11-20 ex. ______	3. ☐ 11-20 ex. ______
4. ☐ 21-30 ex. ______	4. ☐ 21-30 ex. ______	4. ☐ 21-30 ex. ______	4. ☐ 21-30 ex. ______
5. ☐ 31-50 ex. ______	5. ☐ 31-50 ex. ______	5. ☐ 31-50 ex. ______	5. ☐ 31-50 ex. ______
6. ☐ 51-100 ex. ______	6. ☐ 51-100 ex. ______	6. ☐ 51-100 ex. ______	6. ☐ 51-100 ex. ______
7. ☐ 101-200 ex. ______	7. ☐ 101-200 ex. ______	7. ☐ 101-200 ex. ______	7. ☐ 101-200 ex. ______
8. ☐ 201-300 ex. ______	8. ☐ 201-300 ex. ______	8. ☐ 201-300 ex. ______	8. ☐ 201-300 ex. ______

BEST COPY AVAILABLE

Section VI

Developmental Guide

Parents may want to periodically check the developmental guide in this section. Parents can note any areas of development the child is not performing on age level. The parent advisor should discuss the child's development with the parent and together they can provide enrichment activities that will give the child opportunities to develop the skills.

DEVELOPMENTAL GROWTH

A developmental checklist for children 0-3 was developed by the Texas Education Agency as part of their Stage O Curriculum. This Stage O Curriculum is a developmental curriculum for hearing impaired children 0-3 years of age. The Stage O developmental checklist is in this section of the Parent Notebook. General developmental guidelines are also included for children 3 to 6 years of age. These checklists are not developmental testing scales. Rather, their purpose is to be a reference for parents. Parents of handicapped children are often overly concerned about the child's development. The child may be normal in every area except a specific one affected by the handicap. It is important that parents know what normal development is so they will not be concerned in areas where the child is not developmentally delayed but will be aware of areas where the child is indeed behind.

Parents are asked to periodically check the developmental skills for the age of their child and record specific areas where they feel their child is behind in normal development. A form is provided in the Parent Notebook for the parents to record this information. The parents, parent advisor, psychologist or other professional will then discuss the areas where the child is behind and plan an appropriate program for the child.

For the child 0-3 who shows developmental delays, the Stage O Curriculum can be used to provide parents with activities to promote the development of specific skills on the Stage O developmental checklist. SKI*HI endorses the use of the Stage 0 Curriculum as a supplement to the SKI*HI Home Visit Curriculum. The Stage O Curriculum and a self-training packet can be obtained from:

Resource Center and Publications
Texas Education Agency
201 East 11th Street
Austin, Texas 78701
(512-475-2268).

DEVELOPMENTAL GROWTH

Record of areas which may need assistance in development

Date:
Age of child:
Area of concern:

Plan for developmental assistance:

Date:
Age of child:
Area of concern:

Plan for developmental assistance:

Date:
Age of child:
Area of concern:

Plan for developmental assistance:

Date:
Age of child:
Area of concern:

Plan for developmental assistance:

Stage 0 Developmental Checklist*

Stage 0
Perceptual Motor Development

	Locomotion	Prehension	Other Fine Motor Skills	Visual Discrimination
Month 1	Lifts the head momentarily and adjusts posture when being held on an adult's shoulder.	Waves the arms at the sight of an object but is unable to reach and grasp it. If accidentally does grasp it, the object is not looked at but is merely a reflex grasp.		Moves and focuses the eyes together in symmetrical eye movement.
Month 2	Begins to exhibit postural control of the head and upper trunk; i.e., he/she will turn the head to the side and the trunk and limbs will follow as a unit.	Attempts to grab an attractive object but not intentionally bring the grasped object into the visual field for inspection.	Sometimes brings a grasped object such as a rattle to the mouth.	Looks promptly at an object held at midline and will follow the object 90° visually as it moves from center to side or from side to center of the body but will not visually track it across the midline.
Month 3	Exhibits complete head control and extends the trunk as a single unit while lying on the stomach.	Grasps an object by chance as reaches for and closes on a dangling object and can bring the hand or object to the mouth whenever wishes to do so.	Manipulates and plays for several seconds with a rattle placed in hand.	Shows coordination of both eyes by following moving objects visually with horizontal, vertical, and circular eye movements.
Month 4	Sits with support for 10-15 minutes with the head held erect in midline, the trunk rounded and the shoulders forward.	Uses a "mitten grasp" with the palm of the hand and the fingers opposing the thumb in grasping.	Retains objects which are placed in each hand and can pass objects from one hand to the other.	Tracks a falling object or a ball rolling across the table visually as manipulates the table edge slightly and stares at the place from which the object drops.

---

* Stage 0 Developmental Checklist was developed by the Texas Statewide Project for the Deaf, Texas School for the Deaf and the Office of Services for the Deaf, Texas Education Agency.

Stage 0
Perceptual Motor Development

	Locomotion	Prehension	Other Fine Motor Skills	Visual Discrimination
Month 5	Rolls from the back to the stomach and the stomach to the back or from side to side.	Uses thumb more skillfully in partial opposition to the fingers when grasping (radial palmar prehension.)	May begin attempts to sign or gesture for communication.	Reaches farther for more distant objects and uses a shorter reach for objects that are close, showing an ability to distinguish near and distant objects in space.
Month 6	Creeps forward or backward by propelling himself or herself with the legs and steering the direction with the arms when lying on the stomach.	Grasps objects using the forefinger and the thumb (pincer grasp).		Watches things happen in the surroundings by shifting visual attention from one object or event to another when two or three are presented simultaneously (scanning).
Month 8	Sits for short periods of time with both hands and arms free to play without being needed for support.	Attempts to hold two objects as a third is offered and may bang them together.	Holds an object with the side of the palm and the thumb and pokes or examines it with the index finger.	Shows an interest in greater details of objects by concentrating attention more carefully.
Month 10	Cruises or walks sideways while holding onto a supporting object such as furniture or can walk a few steps when held by both hands or supported by the trunk.	Carries two small objects in one hand and differentiates use of two hands.	Continues attempts to sign, repeating those signs or gestures parents recognize and reinforce.	Responds to distant space in terms of regions of differing depth and judges distances more effectively.

Stage 0

Perceptual Motor Development

	Locomotion	Prehension	Other Fine Motor Skills	Visual Discrimination
Month 12	Walks a few steps using a toddler gait with the arms held high at shoulder level and the feet widely spread for balance but will have difficulty stopping, turning and changing directions.	Uses each finger individually, especially the index finger to do such things as press a buzzer, turn a dial, stick it in a pegboard hole, etc.	Forms several more signs correctly, mastering additional cheremic components (for example, mother, daddy, milk, dog, etc.)	
Month 15	Seats self on a low chair for short periods of time.	Throws an object repeatedly and picks it up again to exercise new ability to release an object in grasp.	Makes both spontaneous scribbles and also strokes a crayon in the air imitatively after an adult draws a vertical stroke.	Exhibits depth perception by reaching into a box for a ball or putting a ball into a box while guiding self in locomotion so as to easily avoid obstacles.
Month 18	Walks and runs using a somewhat wide stance, but will begin using a gait which increasingly resembles an adult's.	Begins to show a hand preference when doing such things as turning the knob of a radio or television but will have some difficulty due to limited agility at the wrists.	Grips a crayon with the butt end firmly in the palm and scribbles a straight line and circular strokes and will attempt to imitate scribbles.	
Month 21	Improves his or her ability to go up and down stairs but he or she continues to need one hand held and to take one step at a time.	Exhibits a fully developed grasp, prehension and release of objects.	Fits related objects together appropriately by releasing, pressing, and turning until they slide into place; e.g., ring onto a pole, peg into a pegboard, nesting cups, etc.	

Stage 0

Perceptual Motor Development

	Locomotion	Prehension	Other Fine Motor Skills	Visual Discrimination
Month 24	Squats all the way down to play with toys without using the hands for balance or propping himself or herself up, resuming a standing position without difficulty.	Uses both hands and fingers to turn a doorknob and unscrew a jar lid.	Strings several large beads by holding the bead with one hand and pushing the string through the hole with the other.	Detours around an obstacle in pathway to follow a rolling or bouncing ball.
Month 28	Climbs up and down short play equipment ladders such as rocking boats, playhouses, etc.	Associates certain actions with one hand or one foot.	Scribbles in a more controlled way, experimenting with vertical and horizontal lines, dots, and circular movements.	
Month 32	Walks up stairs alternating the feet with one hand being held or holding onto the rail and descends the stairs alone by marking time.	Is definitely becoming left- or right-handed.	Attempts to use blunt scissors to snip paper with a minimum of success.	
Month 36	Runs smoothly making changes in speed easily.	Uses one hand to hold something and the other to turn, stir, or crank an object.	Builds a tower with 9 or 10 blocks as well as some enclosures and simple designs.	

Stage 0
Cognitive Development

	Exploration	Recognition, Recall and Imitation	Object Permanence	Discovery of Relationships	Problem Solving	Mental Representation
Month 1	Stops sucking to look at something.	Remembers an object that reappears within 2 1/2 seconds.				
Month 2	Uses adaptive movements instead of simple reflexive reactions.	Anticipates familiar events; i.e., feeding, being picked up, etc.	May continue briefly to look at the spot where a moving object was last seen.			
Month 3	Repeats actions for their own sake.	Begins to recognize and differentiate family members and looks carefully at a person's face while being fed.		May begin [illegible] associate an action with its result; i.e., kicking a crib gym and producing a noise.		
Month 4	Focuses attention on causing something to happen to an object instead of on movements alone.	May prefer one toy to others.	Watches the place where a moving object disappeared.			

Stage 0

Cognitive Development

	Exploration	Recognition, Recall and Imitation	Object Permanence	Discovery of Relationships	Problem Solving	Mental Representation
Month 5	Coordinates two actions in play; ie., holding and shaking a toy.	Discriminates strangers from family members.	Visually searches for fast-moving objects and objects he or she has previously looked away from and those which have fallen.			
Month 6	Reaches for, grasps and inspects objects.	Briefly copies a new movement modelled by an adult.	Looks in the direction of a fallen object out of reach and/or out of view.	After grasping two blocks, looks immediately toward a third.		
Month 8	Explores motions of "in" and "out" by putting small objects in and out of a container.	Imitates familiar movements and/or sounds being produced by a parent or adult provided the child can see or hear the movements and/or sounds.	Searches behind a screen for an object if he or she is looking when it is hidden.	Is aware of the relationships between his or her own body and movements and those of others.	Solves simple problems like kicking to make a hanging toy move or pulling a string to get an attached toy.	Combines known bits of behavior into a new act.
Month 10	Is aware of vertical space. Begins climbing on objects and exploring vertical movements.	Begins imitating people and behaviors no longer in sight.	Realizes that an object continues to exist after he or she can no longer see, touch, hear, or smell it.	Matches two blocks.	Tries out new acts for the same goal; modifies old acts through trial and error.	Role plays troublesome acts; shows symbolic thinking (for example, pats a hurt).

Stage 0
Cognitive Development

	Exploration	Recognition, Recall and Imitation	Object Permanence	Discovery of Relationships	Problem Solving	Mental Representation
Month 12	Explores container-contained relations: lifts lid from box; unwraps cube; pokes clapper of bell.	Imitates a model more deliberately and precisely.	Unwraps toys; finds toys under boxes, cups, and pillows; searches for hidden objects even if he or she has not seen them hidden.	Stacks objects such as plates, bowls, cups, blocks, etc. by recognizing those that fit together.	Through trial and error, may find effective ways (truly new to him or her) to solve problems.	
Month 15	Will empty anything he or she can get to—drawers, cabinets, trash cans, hampers, purses, etc.	Indicates likes, dislikes, and preferences (for example, food, toys, games).	Demonstrates that a disappeared object may be found in different places.	Solicits help from a caretaker to obtain objects or complete tasks.	Combines objects with other objects to create new ways of doing things.	Moves the arms and legs of a doll, sticks the fingers in its mouth, and moves it so that its eyes open and close to imitate the movements of infants.
Month 18	Still likes emptying containers, but is beginning to be occupied with fitting objects into other objects.	Performs a series of known movements after they are demonstrated by an adult (for example: wipes a table with a sponge, pours from a teapot, and wipes his or her face with a napkin.)	Finds an object which has been placed under one of three coverings by lifting each until it is located.			Engages in imaginary play by using objects to represent other objects or to reproduce activities which normally occur in a different context.
Month 21		Can obtain a familiar object from a different room on command.		Can place a triangle, a circle, and a square block correctly in a form board.	Can complete simple jigsaw puzzle of two to three pieces.	Identifies pictures in a book.

Stage 0
Cognitive Development

	Exploration	Recognition, Recall and Imitation	Object Permanence	Discovery of Relationships	Problem Solving	Mental Representation
Month 24	Likes to fill and empty, put in and put out, tear apart and fit together objects and their parts.	Can sometimes identify gross body parts by touching such places as tummy, back, arms, legs, thumbs, or face when asked to do so.	Deduces the location of an object from indirect visual cues (invisible displacement).	Knows that a picture represents a real object even when the representation differs in size and color from the real object.	Can complete a three-piece form board.	
Month 28	Attempts to disassemble and reassemble anything with parts.	Calls attention to his or her imitation of parental behavior.	When objects not visible can be in only a finite number of places, searches those places systematically until the objects are found.	Begins to discover elementary cause-effect relationships: i.e., when you cover or close your eyes, you cannot see.	Experiments somewhat systematically to solve problems; reverts to trial and error only when experiments fail.	Relates pictures and diagrams to real objects.
Month 32	Is sometimes attentive to specific stimuli, especially those chosen by the child, up to 30 minutes at a time.	Knows how to play several simple games.	Transfors search strategies learned in play to locate missing clothing, dishes, or tableware, and other movable objects (for example, pillows, blankets, magazines, etc.)	Begins to group objects on the basis of some common attribute.	Recalls how to work a specific puzzle or table game and does so more quickly on repeated attempts.	Creates subspaces with furniture, blocks, and toys in which to pretend being other places or doing other things.
Month 36	Pursues self-selected play activities up to an hour (or more) at a time.	Displays an increasing recall of the sequence of daily routines of and can verbalize and/or perform some of the expected behaviors associated with them.		Identifies objects by their use (for example, "What do we drink from?" "Eat with?")	Seeks more complicated games to play, puzzles to work and general problems to solve in order to apply his or her growing range of successful strategies.	Asks more precise and complete questions; gets parents to supply missing words or signs when necessary; persists until satisfied.

Stage 0

Social Development

	Relationships With Adults	Development of Emotions	Relationships with Peers	Development of Self-Help Skills	Self-Concept	Play with Toys and Books
Month 1	Maintains brief periods of eye contact when feeding.	Exhibits feelings, activity level, and reactions to stimulation which are unique for each.	Shows no awareness of the presence or absence of peers, or of a peer's cry, voice, or touch.	Exhibits a sucking or "rooting" reflex.		
Month 2	Reacts to removal from view and/ or touch of a familiar person.	Shows delight.	Begins to smile in the presence of peers.	Eats on somewhat more regular schedule according to individual needs.	Quiets self with sucking.	
Month 3	Smiles and vocalizes in response to the primary caretaker's presence, voice, or signs.	Expresses emotion through facial expressions, body movements, and vocalizations such as chortles, squeals, whimpers, and smacking of lips.	When placed next to a peer, responds by staring or touching.	Increases activity in anticipation of feeding (e.g. movement of arms and legs, etc.)	Exhibits a beginning awareness of his or her hands and feet as extensions (for example, holds up own hand and looks at it carefully).	
Month 4	**A2a1:** Responds with at least a single behavior to an adult's attempt to interact.			Recognizes a bottle or breast on sight and purses mouth for food.	Shows interest in own image in mirror and may smile at it.	Exhibits awareness of things outside of self by showing an interest in playthings.

Stage 0
Social Development

	Relationships with Adults	Development of Emotions	Relationships with Peers	Development of Self-Help Skills	Self-Concept	Play with Toys and Books
Month 5	Smiles or vocalizes to get attention and to make social contact.	Shows fear, disgust, anger in addition to pleasant emotions.		Begins taking some liquid from a cup as interest in breast feeding may begin to lag.	Discriminates self as being different from caregiver in the mirror and may makes faces in imitation of caregiver's actions.	
Month 6	Withdraws or cries when a stranger approaches.	Differentiates familiar and unfamiliar environments.	Smiles, vocalizes, or gestures in response to a peer's face or voice.	Wants to manipulate his or her own bottle and hold semi-solid food in own hand when eating.	Discriminates self from image in the mirror but continues to smile, talk, and gesture to mirror image.	
Month 8	Shows a strong preference for caretaker and quiets quickly when caretaker talks to him or her.		Systematically explores by touching a peer's hair, face, clothing, etc.	Drinks from a cup or glass while trying to help the adult hold it.	May suck fingers and thumbs as well as bring the feet to the mouth while playing and while lying on the back.	Occupies self unattended for up to 20 minutes in playing with toys, biting and chewing on them.
Month 10	Initiates play activities with adults.	Indicates different moods such as sadness, happiness, discomfort, anger, etc.	Begins to protect self and defend possessions and favorite toys.	Becomes somewhat less resistant to being dressed and undressed.		Chooses a specific toy deliberately and shows a preference for one or more special favorites.

Stage 0

Social Development

	Relationships with Adults	**Development of Emotions**	**Relationships with Peers**	**Development of Self-Help Skills**	**Self-Concept**	**Play with Toys and Books**
Month 12	Shows much affection toward primary caretaker and reacts strongly to being separated from him or her.	Begins to inhibit own behavior and show a sense of guilt when caught at wrongdoing	Responds to a peer's attempt to interact (e.g., vocalizes or gestures in response to a peer's vocalization or gesture; accepts a toy which is offered by a peer).	Participates in helping to dress self (e.g., puts an arm into a sleeve when it is held out, extends the leg when putting on pants, etc.)	Responds to own name, signed or spoken (for children with usable hearing).	May turn pages of a book, not necessarily one at a time.
Month 15	Wants to keep caretaker in sight while exploring so can check back with them frequently as a secure base.	Exhibits an increase in negativism by expressing refusals with bodily responses primarily; occasionally may say "no".	Interacts with other children mostly in a physical manner (for example, touching, pushing, hugging, giving or taking a toy).	Imitates very simple hygiene and basic grooming behaviors (for example, attempts to brush hair, tries to blow own nose, or wipe it).	Exhibits self-assertive behavior and wants to do as much as can alone.	Manipulates with much experimentation such favorite playthings as balls, spoons, cups, clothespins, boxes, fitting toys, small cars, horses, sandbox toys, etc.
Month 18	Plays contentedly alone in "solitary" play for short periods as long as an adult is nearby.	Exhibits a very strong will and is negativistic at times if does not get own way.	Begins to develop a very simple awareness of social rules and have some expectations about own appropriate behavior although interpersonal relations with other toddlers are dominated by ideas of taking rather than giving or sharing.	Wants to help dress self but often needs adult assistance in zipping, buttoning, buckling, tying, etc.	Struggles to be independent but at the same time tries to influence the behavior of others according to his or her will.	Enjoys toys which are designed to provide opportunities to lug, tug, dump, push, pull, pound and use large motor skills.
Month 21	Enjoys assisting in household chores that have a lot of active movement involved with the adult serving as a model and a positive reinforcer (e.g., sweeping, mopping, dusting, vacuuming, shovelling, raking, etc.)	Begins to sympathize with another person and shows at least a shallow understanding of the feelings of the other person.	Imitates some of the play activities of older siblings (e.g. tag).	Begins to exhibit a cooperative toilet response by sitting on a potty or toilet without undue resistance and urinating later.	Refers to self by name, uses the personal pronoun "me", and claims objects as "mine".	Continues to expand interests in a variety of toys and activities (e.g. car rides, outings, walks, pedal-type wheel toys, mud pies, sand and water play, riding toys, dump trucks, large empty boxes, small rubber ball, etc.)

Stage 0

Social Development

	Relationships with Adults	Development of Emotions	Relationships with Peers	Development of Self-Help Skills	Self-Concept	Play with Toys and Books
Month 24	Cooperates in activities and behaviors a good portion of the time even though does not yet understand the principle of cooperation.	Shows a tendency toward strong reactions, both positive and especially negative, by using such expressions as "It's mine," "I don't like it," "Go away," "I don't want to," "I want it," along with or in place of temper tantrums.	Shows an increase in possessiveness and may become aggressive by slapping, biting, and hitting if ignored.	Puts on simple garments without differentiating front and back or right and left but has an attitude of wanting to "do it myself".	Assumes an increasingly more self-sufficient and assertive attitude by continually testing the limits and actively making own choices.	Participates in simple make believe activities such as playing house with stuffed animals and dolls with the child doing the talking for everyone.
Month 28	Often tries to please adults by following directions as best he or she can and responds to approval or disapproval of the results.	Shows feelings of concern for those he or she is especially fond of as well as affection and caring behaviors when appropriate.	Behaves as though other children were physical objects and may hug them or push them out of the way somewhat unpredictably wanting to make friends but not really knowing how.	Occasionally has daytime toileting accidents but not too often on routine days.	Likes to control the behavior of others and tell them what to do and will begin to use words more often than tears to do so.	Expands interests to include being told stories which are illustrated with many pictures, looking at picture books, and discussing each page.
Month 32	Engages in symbolic or pretend play with an adult in which he or she initiates and directs the activity rather than responding to adult direction (e.g., the child will offer a cup of pretend tea to the adult and refill it.)	Begins to develop a rudimentary sense of conscience when can control some areas of his or her behavior to conform to social demands.	Uses peers as a resource by seeking their help when it's needed and by turning to a peer as a partner in a task or activity which requires two persons.	Takes off most clothing independently but still needs help with laces and fasteners, and will also begin to put away such things as jacket when it is removed.	Begins to understand the functions of different body parts and may become aware of physical differences between boys and girls.	Exhibits an attention span of about 5-10 minutes when listening to stories or participating in music activities (for children with usable hearing).
Month 36	Spends less time interacting with adults as he or she builds expanded friendships with peers.	Avoids dangerous or unpleasant situations and will not usually adapt easily to new situations.	Begins to engage in pretend play with peers such as playing house or cooking. Play is loosely structured and may not have well-developed roles.	Eats at the table with the family without requiring an unusual amount of adult attention.	Uses a more positive means of persuasion to get wishes acknowledged rather than a negative approach.	Enjoys creating a product which results from the expression of own ideas (e.g., simple drawing, painting a picture, play dough objects, etc.)

Stage 0

Language Development

Age for Language	Receptive Language	Expressive Language	Auditory Acuity and Use of Sound
Birth to 3 Months	Gives no acknowledgement that speech or signs have meaning or communicate information.	Cries differentially for attention, pain, and hunger.	Shows a reflexive reaction to a sound or sounds, including arousal, startle response, cessation of activity, widening of eyes, increase of activity, and crying.
4 to 6 Months	Appears to recognize and react to communication.	Produces different cries to express pain, discomfort, need for attention, and anger, accompanied by an overall decrease in the quantity of crying.	Attempts to imitate an adult's imitation of vocalizations.
7 to 9 Months	Recognizes the name of some members of the family and the signs or spoken words for a few common objects and actions.	Reciprocates or mimes words, gestures, or signs for familiar words or signs, such as: "Bye-bye," "Come," "Up," "Sit," "Eat".	Shows an awareness of voices, especially that of primary caretaker.
10 to 12 Months	Responds with facial expressions or actions to a few common phrases (for example, Daddy's home, go car, cookie is all gone.)	Says or signs first work spontaneously (for example, mama, daddy, no, or bye bye).	Begins to associate a sound with its source by pointing, looking, or going to the source.

Stage 0

Language Development

Age for Language	Receptive Language	Expressive Language	Auditory Acuity and Use of Sound
13 to 15 Months	Identifies articles of clothing or body parts, familiar people, toys, animals by pointing.	Uses a spontaneous vocabulary of five or six words/signs.	Responds appropriately to simple directives received through audition alone.
16 to 18 Months	Seems to understand more words or signs than he or she is able to use.	Regularly uses known signs or words in combination with improved gestures or speech sounds and body movements to communicate his or her wants and needs.	Attempts imitation of environmental noises.
19 to 24 Months	Responds accurately to directions involving a simple familiar object (for example, "Get your shoes," "Shut the door," "Bring the cup," "Find your coat," "Pick up your toys," the object may be out of sight or out of the room).	Combines two signs into a telegraphic communication (for example, "More drink," "Eat finished," "No bath").	Approximates the vowel sounds, intonation patterns, and duration of speech sounds presented by an adult.
25 to 30 Months	Responds accurately to most common adult directives, signed or spoken.	Uses at least one hundred signs or words.	Recognizes most sounds and locates their sources.

Stage 0
Language Development

	Receptive Language	Expressive Language	Auditory Acuity and Use of Sound
31 to 36 Months	Understands approximately 300 words or signs including an understanding of most familiar carrier phrases.	Produces utterances or signs approximating short sentences (3-4 words in length) with reasonable fidelity to English word order.	Understands and responds appropriately to spoken language.

SKI*HI Developmental Guide
For Children Three to Six Years of Age

	Physical, Motor Skills	Adaptive	Behavior	Social
Three Years	Increased motor ability	Can say, "Yes" Is in balance with people and the things around him No longer needs the protection of rituals—can vary ways of doing things Feels secure Can give up a toy Language facility increased - loves to exchange with others, enjoys conversation Pleased with himself Simple choices Goes to sleep better, but has nightmares Fantasy and reality confused	Cooperative Easy-going Delightful stage Greater self-control	Can give as well as take Loves to conform Likes to share He can do it "your way" with pleasure Enjoys people and their good graces Out-going Settles his own disputes somewhat - average fight, 30 seconds, one every 5 minutes

	Physical, Motor Skills	Adaptive	Behavior	Social
Three & one-half Years	Incoordination - in all fields of behavior - stuttering Stumbles - falls - fears heights Possible hand tremor Possible crossing of the eyes	Disequilibrium (lack of adjustment and balance) Insecure "Can't see" Nail biting Sucks his thumb excessively, tics, etc. Says, "Don't look" - "Don't talk"- "Don't laugh"	Whines	Difficult relationships with people Wants exclusive attention

Needs: Needs extra affection and understanding

	Behavior	**Adaptive**
Four Years	Out of bounds in every direction He hits He kicks He throws stones He breaks things He runs away Loud, silly laughter Fits of rage - "You make me so MAD." Shocking, out-of-bounds language Profanity, bathroom, elimination words heard now - dwells on them - rhymes them Defies parental demands Toughness - swaggers, boasts, defies	Imagination out-of-bounds - companions - make believe Tall tales - fact and fiction are a fine line - his imaginings become real Brash - confident - too sure

Needs: Parent must set limits - be firm
Must be allowed to test himself - needs neighbors whom he can visit who will notify mother as to his where-abouts
Needs to be allowed to run ahead and wait at next street corner
Reins need to be brought up sharply on occasion

	Physical, Motor Skills	**Adaptive**	**Behavior**	**Social**
Four & one-half Years	Fine motor control better	Life more matter of fact--not so deep Trying to sort out what is real and what is unreal A bit more self-motivated Stays on the track better Interested in details - likes to be shown Realism often too stark for adults, too frank Better able to accept frustrations Interested in letters and numbers Sees several sides A "catching-up" time Possibly a time of rapid intellectual growth	Beginning to bring himself out of the four-year-old behavior Play is less wild	Loves to discuss - has a wealth of material to draw on prompted by intellectual, philosophical kinds of interests

	Adaptive	Behavior	Social
Five Years	Equilibrium (adjustment) Reliable Stable Secure - within himself Capable Lives with here and now Reaches for what he can accomplish; therefore, accomplishes what he tries Satisfied with himself - therefore, others satisfied with him	Calm	Friendly Not too demanding in his relationships with others Mother, the center - enjoys her instruction seeks her permission

	Physical, Motor Skills	Adaptive	Behavior	Social
Six Years	Better muscular coordination Health more robust He can catch a ball He can handle scissors easily Growth proceeding more slowly Large muscles better developed than small ones Needs 11-12 hours of sleep Eyes not yet mature - tendency toward being far-sighted Permanent teeth beginning to appear Heart in a period of rapid growth Inept at activities using small muscles	Equilibrium (adjustment) breaks up Thrusting out, trying new things Wants to come first - to be loved best, to have the most Things must be just so Cannot adapt - others must adapt Vigorous, energetic Ready for almost anything new Wants all of anything Choosing between two alternatives is difficult - he wants both He has to be right He has to win Criticism, blame, punishment are difficult Things have to go his way Random activity channeled into specific drives Curious He can listen better He can speak more distinctly Ready for the skills that school offers him Inconsistent in level of maturity evidenced - regresses when tired, often less mature at home than with outsiders	Difficult to deal with Violently emotional - opposite extremes, loves one moment and hates the next Much goes wrong, demands are strong and rigid Boisterous Aggressive If all goes well he can be warm, enthusiastic, eager for anything If things go badly cries, has trantrums High levels of activity - can stay still for only short periods Eager to learn, exuberant, restless, over-active, easily fatigues Whole body involved in whatever he does	Others are difficult because his own demands are so strong Mother no longer the center - gets blamed *He* is the center or wants to be Extremely negative in response to others Others must give in to him If he is winning all is well, if he is losing he cries, makes accusations Self assertive, aggressive, wants to be first, less cooperative than at five, keenly competitive, boastful

Needs: Needs to be praised

Section VII

Parent Resource Information

A body of information important to parents but not specifically related to the SKI*HI curriculum has been compiled and is available for purchase from the SKI*HI Institute. The information is divided into the following general categories:

1. Terminology
2. Resources available (local programs should add local resource information)
3. Legal and financial information
4. References for parents

These materials may be inserted into this section of the Parent Notebook. The material is available from SKI*HI Institute, UMC 10, Utah State University, Logan, UT 84322.

UNIT 4

HOME HEARING AID PROGRAM

Introduction

Rationale/Goals

Most new parents in the program know little if anything about hearing aids. They do not know how hearing aids work, how to care for them or how to operate them. The parent advisor in the home teaches the parents what the hearing aid is and how to manage it. Personal contact in the relaxed atmosphere of the home allows the parent advisor to monitor the parents' progress in learning these hearing aid skills and give immediate feedback. The parent advisor also provides instructional lessons on related topics, such as the nature of sound, the importance of hearing for language development, hearing assessment, speech perception, and causes and types of hearing losses. Goals of the Home Hearing Aid Program include:

1. All children will be properly fit with hearing aids and earmolds that allow maximum use of residual hearing sensitivity.
2. The child will accept the hearing aid within the first few weeks after the fitting.
3. The parents will demonstrate understanding of the important skills and concepts in the hearing aid lessons which include the importance of appropriate, consistent amplification; as well as hands-on skills such as the daily listening check, trouble shooting for feedback and caring for the hearing aid.

It is hoped that this parent knowledge will enable the parents to become child advocates. They are the primary constant in their child's life; and the goal of the parent advisor is to help them feel they have enough information to actively seek help for and participate in the hurdles their child will face. This parent goal (3) is certainly equally as important as the child goals (1 and 2).

Overview of Program

The home hearing aid program consists of nine lessons and an appendix. Each lesson consists of outline, parent objectives, materials, discussion, teaching strategies, review questions, sample challenges, notes/supplemental information and reference/reading list. Whenever appropriate, the first four lessons are given prior to the hearing aid fitting. Lessons 1, 2, 3, and 4 are informational lessons. The parents learn information and then describe that information back to the parent advisor. Lessons 5, 6, and 7 are skill lessons. The parents learn and demonstrate skills. Any of the first seven lessons can easily be divided into two home visits to facilitate parent learning. Lesson 8 contains a review of lessons 1-7 and discussion questions and answers. Lesson 9 is a competency test to help determine whether or not to continue on to the Auditory Program.

Discuss briefly:

1. Appropriate use and care of instrument
2. Establishing positive approach to hearing aid usage
3. Auditory responses appropriate for child's developmental level that might be observed during this first week.

All of these skills will be covered in more detail in the hearing aid and auditory programs. Don't expect the parents to remember these skills the first week of hearing aid usage, and don't assume the parents know this information even if their child has already been fitted with permanent aids. Do give them enough information to get off to a good start. They should be made to feel comfortable about contacting the parent advisor for additional help.

General Teaching Suggestions

In order to effectively present the home hearing aid lessons, it is essential to be thoroughly familiar with the lesson content. Do *not* read the lessons in the home. It may be helpful to make an outline of the lesson content or use the parent objective outline, which is at the beginning of each lesson, so that all important concepts can be included.

Remember to consider the parents' feelings in regard to having so much information given to them. Ask them, "What do you need to know?" "What do you want to learn about first?" Treat each parent as a co-worker; the goal is to help them develop autonomy and initiative, so that they will be effective advocates for their child. Remember the parent advisor's role is that of a facilitator, not a teacher. The parents who are being helped to acquire this information are in a crisis situation which demands they develop a new view of the world. Be a good listener during the presentation of these lessons. Often parents will ask the parent advisor to give an opinion (on hearing aids, etc). In the beginning, it may be important not to give an opinion but rather state: "I'll bet you've been thinking about this a lot. Tell me what you are thinking," etc. Help them to acquire the information they need to make decisions themselves.

Although the hearing aid lessons are designed to build parents' concepts and skills in a systematic way, parent advisors need to be flexible and willing to give any lesson whenever the parents have a need for the information. For instance, it is not uncommon to make a first home visit to parents who already have their child's hearing aids but who express frustration at their lack of understanding. They need lesson 5. Or, a family may be in the process of their child's audiological evaluation and want to be able to understand the audiologist's technical vocabulary. They need lessons 3 and 4. Be flexible. Be ready.

Lesson 1

Hearing For Language; Sound

Outline/Parent Objectives

- I. Parents will describe the four reasons why sound is so important
    - A. Language
    - B. Physical sensory deprivation
    - C. Psychological sensory deprivation
    - D. Warning
- II. Parents will explain how sound is made
    - A. Moving source
    - B. Medium for the moving source-air
- III. Parents will explain how sound travels through the air
    - A. Air molecules pushed by source, then spread out again
- IV. Parents will define
    - A. Frequency - pitch of a sound
    - B. Hertz - new name for frequency (pitch), Hz.
    - C. Decibel (dB) - loudness (intensity) of a sound

Materials

1. Flip chart
2. Pencil
3. Marbles, q-tips, rubber band, bell, drum, etc. to show motion of air molecules
4. Piano, pitch pipe or other musical instrument (can use voice to show different pitches)

Lesson

Discussion: Why sound is important. Discuss with the parents the need for them to understand why sound is important, how it is made and how it travels through the air. This information and understanding of several professional terms will make it easier for them to deal with their child's hearing aids and with other professionals they will meet. Sound is important for several reasons. It is important to provide meaningful sound as early as possible. Hearing aid usage during the preschool years fosters hearing aid acceptance. The following discussion may help in the presentation of these ideas.

"Suppose you were very young like your child and did not know any words and suppose there was no sound to hear these words. Let's pretend there is no sound (I will not use my voice). See how much you can understand. (Drop voice and say a few words or sentences in a foreign language or use nonsense words.)

What did you understand? (Response: Nothing.) You see, when a child does not know a language (the words) it is very hard to understand what is being said, but it is even more difficult if there is no sound. So sound is important to help your child learn words (language). We all learned language by hearing it during critical periods of readiness. Lenneberg (1967) states that the development of speech and language is based upon innate biologically programmed factors. Thus, the earlier the stimulation via aided hearing, the better.

Sound is important to learn language, but it is also very important for other reasons:

1. Sound helps to prevent what is called sensory deprivation. While research is limited, the results do substantiate the notion that physiological changes may result from early and prolonged sensory deprivation (lack of sound).

2. Sensory deprivation can also affect psychological aspects of development. Theories of personality development indicate that a basic level of development is related to the emergence of a sense of trust Trust apparently develops as the child's environment becomes more predictable through visual and auditory monitoring (seeing and hearing) the environment. Sound makes the child feel part of the world. If the hearing aid only helps in the prevention of psychological sensory deprivation, it will be enough. The expense and effort of putting on the hearing aid will be worth it.

3. Sound provides warnings and helps the individual to know how to act. If something falls behind the child, he can turn and pick it up. If a car honks, he can get out of the way. If mother shouts, he can come running (or run the other way). The hearing aid will help bring sound to the child.

Discussion: How sound is made and how sound travels through air. There are two things needed to have sound. There must be something moving back and forth (demonstrate with rubber band being plucked, or bell or drum; mention violin string, vocal cords) and there must be something for the sound to travel through (air). The following discussion may be utilized to explain how sound is made and how it travels through the air.

First, we have something moving back and forth (Figure 1, flip chart; rubber band, etc.). As the source of sound moves back and forth it pushes on the molecules of air so that this molecule pushes this molecule (point to imaginary molecules). It is like dominoes. (Show Figure 2 in flip chart--draw illustration or use marbles in a line, one pushing against the other; or use q-tips held in hand, one tip pushes the other.) As the source moves back and forth rapidly, the air molecules move together, then spread out.

Use a real slinky (if desired) to show how the compressed rings, which represent air molecules pushed together, move through the air or refer to Figure 3 in the flipchart. Another way to illustrate how sound travels is to use an air sack. Blow air in plastic bag. Talk on one side of the bag and have the parents on the other side feel the sack move. Explain that the air molecules in the sack are moving together and apart and are moving the plastic on the other side back and forth (vibration).

Discussion: Definition of frequency, hertz, dB. Sound is something vibrating (moving back and forth) and as that thing moves forward, it pushes on air molecules and the molecules squeeze together. As it moves back, the molecules spread out.

When the rubber band (or string on a musical instrument) moves back and forth (demonstrate) one time, that is one cycle (refer to Figure 4 in the flipchart). If it moves back and forth ten times it would be ten cycles. If it moves back and forth 250 times in one second (try to demonstrate), that would be 250 cycles per second (refer to Figure 8 in Flip Chart to show 250 cps on Audiogram). This would be middle C (play on piano or use pitch pipe or other instrument). Another name for cycles per second is Hertz. If the source vibrates 250 times in one second that would be 250 Hz (middle C). How fast the sound source vibrates determines how high or low the sound will be. If it moves very slowly (125 times in one second) you would hear a low sound (octave below middle C). If it moves very rapidly (500 times in one second), you would hear a higher sound (one octave above middle C). Pitch is how high or low a sound is (frequency, Hz). Sound can be high or low and it can also be loud or soft.

Decibel (dB) is the term for how loud a sound is. If a sound is very soft (whisper) it would be about 10 dB. Normal voice would be about 60 dB. If a truck passed by, that would be about 110 dB. Decibel is simply a way to measure loudness (like inches measure length and pounds measure weight)."

Review Questions For Parents

1. Sound is important for four things. What are they?
   (language, to prevent physical sensory deprivation, to prevent psychological sensory deprivation, and warning)
2. What two things are needed for sound to happen?
   (moving source, air)
3. How does sound travel through the air?
   (sound source pushes air molecules)
4. What is pitch (frequency)? What is Hertz?
   (both are names used for the number of sound vibrations occurring per second)
5. What is dB?
   (the name used to describe the loudness [intensity] of a sound)

Sample Challenges

None

References and Reading List

Lenneberg, E. H. (1967). *Biological foundations of language*. New York: John Wiley & Son.

Webster, D. & Webster M. (1977). Neonatal sound deprivation affects brainstem auditory nuclei. *Arch Otolaryngol*, *103*, 392.

Lesson 2

Perception of Speech

Outline/Parent Objectives

I. Parents will briefly describe how speech sounds are recognized
   - A. Primarily through auditory cues, but also through vision and touch

II. Parents will describe how the perception of speech is affected by:
   - A. The speaker's pitch
     - 1. Men have lowest pitches
     - 2. Women have higher pitches
     - 3. Children's pitches are highest
   - B. Connection to other speech sounds
     - 1. Individual sounds are modified by the sounds next to them
     - 2. Changes in intonation and pitch change the meaning
   - C. The listening environment
     - 1. Loudness of conversational speech fluctuates rapidly (between 30-60 dB)
     - 2. Background "noise" is often present

III. Parents will state the sensitivity required for full audibility (loud enough to be heard) and how much louder it must be than background noise.
   - A. Hearing at 30 dB hearing level is required for full audibility
   - B. Speech must be at least 18 dB louder than background noise; 30-40 dB louder would be ideal

Child Objectives

1. Upon fitting of aids, aided hearing for the primary speech frequencies (500-2000 Hz) will be as close to 30 dB hearing level as possible.

Materials

1. Parent handout, "Audiogram with Intensity and Frequency of Speech Sounds"
2. Parent handout, "Comparison of the Frequency and Intensity of Various Environmental and Speech Sounds"

Lesson

Discussion: How speech sounds are recognized. Although speech can be partially perceived by the senses of vision and touch, it is only through audition that full perception occurs. The term auditory perception has been utilized to mean anything from one specific perceptual skill to all perceptual bases of language. Language is the means by which all experience is symbolized and communicated. For this lesson the term is utilized to describe the ability (of the child) to discriminate or recognize both nonverbal and verbal stimuli from irrelevant background information. Speech sounds can be described acoustically from three different perspectives: (a) the individual sounds, (b) connected speech, and (c) the listening environment.

Individual Sounds. People with normal hearing can hear the frequency range between 20 and 20000 (point out range from far below to way above the 125-8000 shown on the parent handout "Audiogram with Intensity and Frequency of Speech Sounds." People can also hear the difference between thousands of different tones. Although it is possible to perform precise analyses of the loudness, duration, sequences, voicing, etc., of speech signals using electronic instruments and computers, it is not certain which of these isolated acoustic clues people use to communicate information.

For example, it is known that normal hearing infants can discriminate many speech sounds almost from birth. Also, it is well known that hearing impaired listeners have difficulty discriminating certain sounds, for example /b/ from /d/ (one voiced stop consonant from another) or /p/ from /t/ (one unvoiced stop consonant from another).

The cues people receive for each speech sound are also dependent on the speaker's pitch. Men's vocal pitches tend to be concentrated in the 100-150 Hz lower frequency region, whereas women's pitches are in the 200-225 Hz region. A child's speech is even higher in pitch than that of a woman.

Connected Speech. It is easy to hear how individual speech sounds are modified by the sounds next to them. An infant must learn, through listening, the "boundaries" (beginning and ending) of speech sounds and words. A speaker's timing and stress patterns also greatly contribute to intelligibility. Stressed speech is usually accompanied by pitch *change* which conveys a great deal of information (meaning).

The parent advisor should give parents examples of how rising pitch is used at the end of a sentence to indicate intention to continue; or a question versus a declarative sentence (It's over? It's over.); or a sentence that is without stress.

The Listening Environment. The parent advisor should use the parend handout "Audiogram with Intensity and Frequency of Speech Sounds" to point out the following information.

The intensity (loudness) of conversational speech fluctuates rapidly within the range of 30-60 dB. For example, when a /sh/ sound occurs, intensity in the region of 2500-4500Hz may be approximately 20 dB louder than when the unvoiced /th/ is produced. Thus detection of speech (yes, it's there or no it's not) is possible when hearing is within 60 dB of normal; however, full audibility requires sensitivity within 30 dB of normal.

The listening environment frequently includes noises from television, other people speaking, heaters or air conditioners or appliances. (Use parent handout, "Comparison of the Frequency and Intensity of Various Environmental and Speech Sounds" to support this point). Although this noise may be only 10-15 dB below speech, it masks out a significant amount of the speech. The listener must fill in what cannot be heard by using his knowledge of language. For infants and children who cannot hear all the acoustic cues clearly, *average* speech needs to be at least 18 dB above (louder than) the level of the background noise in the speech range and preferably 30 or 40 dB louder.

Teaching Strategies. For parents of children with mild-moderate hearing losses, a discussion is available in The Middle Ear Program (SKI*HI Institute Monograph Series). It includes *Perception of Speech* relating to word meanings, functional relations of words (grammar) with prosody as an additional lesson. Use this information for parents of more profoundly deaf infants whenever it is appropriate. This monograph can be obtained from SKI*HI Institute.

Review Questions For Parents

1. How are speech sounds perceived? (primarily through audition, but also using some vision and touch)
2. How is the perception of speech affected by:
   a. the speaker? (pitch varies for man, woman, child)
   b. connected speech? (timing, stress, etc., affect learning of the "boundaries" for words as well as meaning)
   c. listening environment? (background noise affects ability to hear the sounds of speech)
3. What sensitivity is required for full audibility of conversational speech? (30 dB)
4. How much louder must speech be than background noise in order for an infant or child to hear the sounds of speech? (18 dB louder minimum, 30-40 dB ideal).

Sample Challenges

None

Reference and Reading List

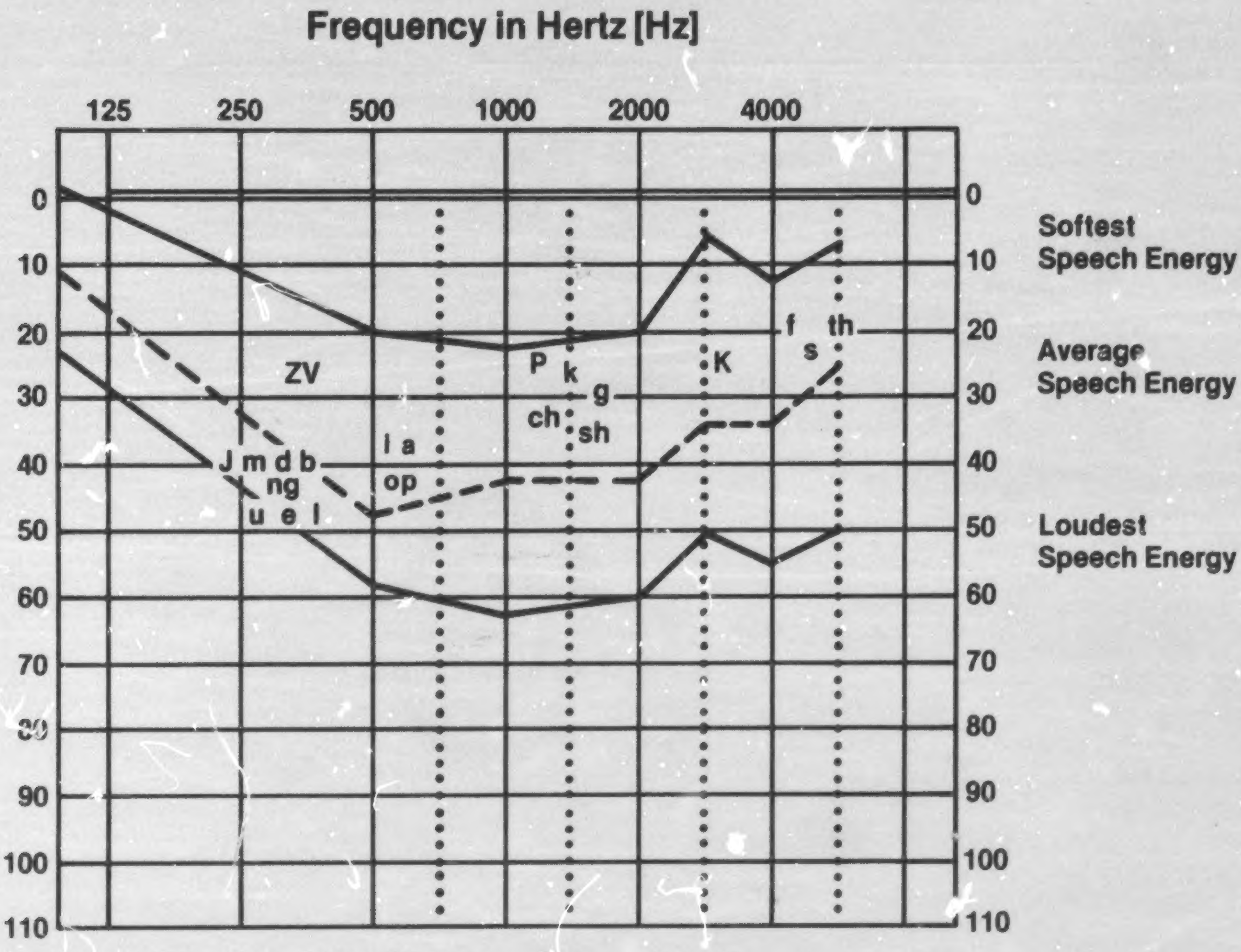
Boothroyd, A. (1982). *Hearing impairments in young children.* Englewood Cliffs, N.J: Prentice Hall.

Boothroyd, A. (1984). Getting the most out of hearing, the audiological and auditory management of hearing impaired children. *Audiology, 9,* 2:15.

French, N.R. & Steinberb, J. C. (1947). Factors governing the intelligibility of speech sounds. *Journal of Acoustic Society of America, 19,* 90-119.

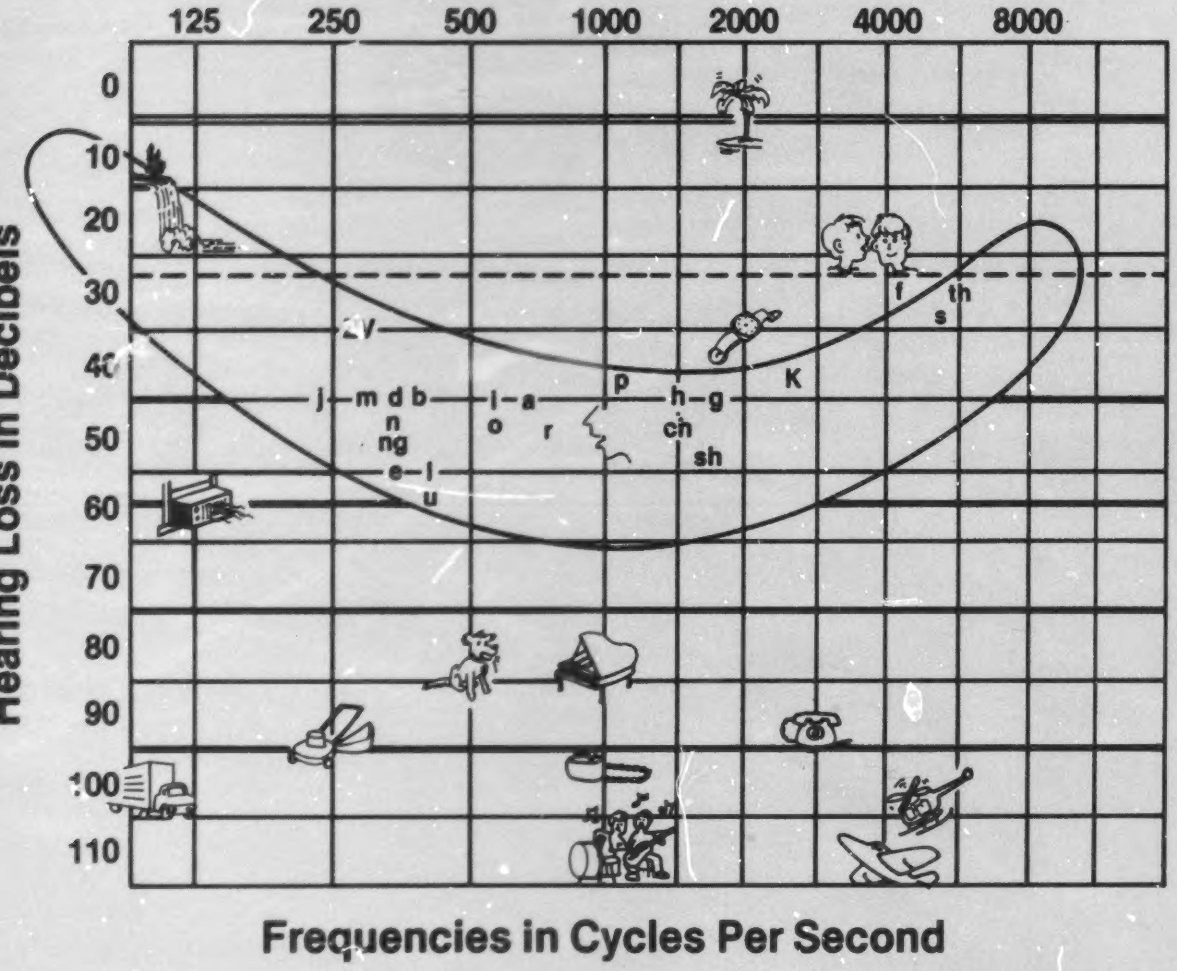
Skinner, M. W. (1978). The hearing of speech during language acquisition. *Otolaryngologic Clinic of North America, 11,* 631-650.

udiogram with Intensity and Frequency of Speech Sounds



Energy range of speech in hearing level measures
(Extrapolated from Skinner, 1978).

Comparison of the Frequency and Intensity of Various Environmental and Speech Sounds



Lesson 3

Otological Care; Anatomy of the Ear; Causes and Types of Hearing Losses

Outline/Parent Objectives

I. Parents will be aware (through a parent handout) of the various medical personnel available to their child and be able to state the need for continued medical care
  A. Otolaryngologist or otologist gives medical clearance for wearable amplification
  B. Continued periodic medical follow-up is necessary:
    1. To detect and treat middle ear infections
    2. To detect progressive hearing loss
    3. To evaluate a balance problem

II. Parents will describe the four parts of the hearing system and what is in each part
  A. Outer ear
    1. Auricle/pinna
    2. Ear canal
  B. Middle ear
    1. Eardrum
    2. Bones: malleus, incus and stapes
    3. Oval window
    4. Eustachian tube
  C. Inner ear
    1. Semi-circular canals
    2. Cochlea
    3. Auditory nerve
  D. Brainstem and brain

III. Parents will describe how sound travels from the sound source, through the ear and to the brain
  A. Sound pushes eardrum
  B. Eardrum pushes three bones
  C. Last bone pushes on oval window
  D. Push on oval window moves fluid in cochlea
  E. Moving fluid in cochlea stimulates the nerve in patterns
  F. Patterns travel up the brainstem

IV. Parents will explain what can go wrong in each of the four parts of the hearing system and what has gone wrong with their child's hearing system
  A. Outer ear
    1. Wax plug in canal
    2. Canal and/or pinna not formed correctly or missing
  B. Middle ear
    1. Three bones broken
    2. Middle ear infection
    3. Hole (perforation) in eardrum
  C. Inner ear
    1. Nerve cells in cochlea damaged or missing
    2. May also be damage to balance mechanism
  D. Brainstem and brain
    1. Auditory nerves in brainstem or auditory portion of the brain damaged or failed to develop
    2. Auditory nerve tumors
  E. Area(s) damaged for this child
V. Parents will explain cause of their child's loss, if known

Materials

1. Parent handout, "Professionals Involved with the Hearing Impaired"
2. Parent handout, "Anatomy of the Ear" (Zenith illustration)
3. Flip Chart
4. Snail Shell
5. Oakland filmstrip, "Anatomy of Hearing Loss" (Use as a review to illustrate concepts in the lesson.)

Lesson

Discussion: Medical personnel available and periodic follow-up. The first step in obtaining hearing aids is medical clearance. (Give the parent the handout, "Professionals Involved with the Hearing Impaired" to aid in this discussion.) This clearance can be provided by an otologist (ear specialist) or an otolaryngologist (ear, nose, and throat specialist) or a family doctor if a specialist is not available. Medical clearance is needed for hearing aid usage because hearing aids are not usually recommended if the hearing loss can be either medically or surgically remedied in the immediate future.

Equally as important is the need for continued medical follow-up, especially of infants and young children who have frequent colds, influenza, other viruses, and bacterial infections of the throat that can cause associated middle ear problems. Many infants do *not* let their parents know when they have a middle ear infection by rubbing or tugging at their ears; therefore, periodic monitoring is essential to determine whether or not middle ear infection is present when an upper respiratory infection (cold) is present. Even children with permanent sensorineural hearing loss have middle ear infections which cause conductive type hearing loss to be overlaid, resulting in a significantly greater loss of hearing.

In a limited number of infants, sensorineural hearing loss is progressive and this needs to be monitored by periodic otologic care. It is essential for hearing impaired infants and young children who experience dizziness or other balance problems to receive otologic care as soon as possible.

Discussion: Anatomy and what can go wrong with the four parts of the hearing system. There are four parts of the hearing system: (a) outer ear, (b) middle ear, (c) inner ear, and (d) brain and brainstem.

The first area, the outer ear, has the ear flap (auricle or pinna) and the ear canal. Wax in the ear canal can build up and become compacted behind an earmold. Every child should be checked regularly for earwax because it can cause temporary hearing loss.

The second area, the middle ear, includes the eardrum in it. The eardrum is connected to three tiny bones (malleus, incus, and stapes). The last bone (the stapes) is connected to the oval window. The eustachian tube is a small tube which goes from the top of the throat to the middle ear. It has two purposes. The first purpose is to drain fluid from the middle ear space. If there is fluid in the middle ear, it will run out of the ear, down the eustachian tube and into the throat. In this way, fluid will stay out of the middle ear. Sometimes infection from the throat moves up the eustachian tube to the middle ear. Since young children have more colds, infections and allergies, it is important to make sure there is no infection in the middle ear.

The second function of the eustachian tube is to make the air pressure in the middle ear the same as the pressure outside the ear. For example, while driving up a mountain or flying in a plane, the ear may begin to feel plugged. The air outside is thin but the air inside the ear is not. This heavy air inside the ear pushes out on the eardrums and causes a plugged feeling. Yawning will cause the thin air from the outside to rush into the mouth, up the eustachian tube and into the middle ear. This feels like a "pop." Now the air pressure is the same on the inside and outside of the middle ear or eardrum and the plugged feeling is gone.

The third part of the hearing system is the inner ear. It has in it: (1) the semi-circular canals which help with balancing, (2) the cochlea which looks like a snail (show shell) and (3) the auditory nerve which goes to the fourth area, the brainstem and brain.

Discussion: How sound travels from the sound source through the ear and to the brain. Something must vibrate for sound to occur. When it vibrates the air molecules are pushed together. The first molecule pushes the second molecule which pushes the third and so on until the molecules push in on the eardrum. The eardrum vibrates or moves back and forth at the same speed (cycles per second) as the source. When the ear drum moves back and forth, it moves the three little bones back and forth. (Refer to Flip Chart Figure 5 or Zenith illustration). The cochlea is filled with a fluid and has thousands of tiny nerve cells in it. As the last tiny bone (stapes) moves back and forth, it pushes on the oval window, which pushes the fluid in the cochlea back and forth. (Refer to Figure 5 and Figure 6 in the Flip chart.) As the fluid moves back and forth, the nerves are stimulated in a certain pattern. The nerves join together into one large nerve in the brainstem that carries the pattern to the brain. (Show Figure 7 in the flip chart).

Discussion: What can go wrong in each of the four parts of the hearing system. When someone is hearing impaired, there is a problem with sound going through the ear to the brain. If there is a problem in the outer ear (wax block in the canal or the pinna and /or canal failed to develop), sound cannot travel through as well as normal. Sound cannot travel through the middle ear if there are problems such as: (a) the three tiny bones are broken, (b) there is fluid or infection in the middle ear, or (c) there is a hole (perforation) in the eardrum. If there is a problem in the outer or middle ear, an otolaryngologist or otologist can sometimes fix it surgically.

When the nerve cells are damaged in the cochlea, the child will have a permanent hearing loss. Some of the things that can cause damage to the nerve cells are:

1. Spinal meningitis
2. Drugs: there are several drugs that adversely affect hearing; parents need to ask their ear specialist which ones should be avoided in case their pediatrician or another doctor inadvertently prescribes one of these drugs.
3. Extremely loud noises: sounds of sufficient intensities and durations can cause injury to the inner ear producing a temporary or permanent hearing loss; firecrackers, model airplanes tested indoors, toy firearms (caps), farm machinery, and extremely loud music are some of the sounds capable of producing injury. Consequently it is important for the child to avoid exposure to these sounds.
4. Viral infections: hearing loss may result from the mother having measles (rubella) during her pregnancy and/or other viral infections such as cytomegalovirus which may be intrauterine or may be contracted post-natally from the mother.
5. Heredity: with most cases of heredity deafness, the cochlea is adversely affected.
6. Rh factor: due to blood incompatibility of mother and infant, hearing loss may ensue; most often the brainstem and/or cochlea are adversely affected.

The causes of about 40% of inner ear hearing losses are not known. Basically, problems in the inner ear cannot be corrected with surgery. Research is being conducted in the areas of cochlear implants (sending electrical stimulation directly to the auditory nerve). Several implantation schemes are under investigation (inside the cochlea, at the oval window, etc.) as well as various stimulation schemes (pulses containing information about fundamental frequency, overall amplitude of the speech signal, and midfrequency cues). Investigators have reported that electrical stimulation does produce auditory sensations and discrimination of stimulus intensity (loudness) changes within normal limits. However, discrimination among signal frequencies (pitch) is poor. Word recognition skills of implanted patients (mostly adults) vary. There seems to be agreement that the use of implanted devices helps patients to control their own speech output and to engage in speech reading. It is likely that the future will bring significant improvements in this field of research and that hearing impaired infants who are considered totally deaf will soon be included, at least on an experimental basis.

If parents want information about acupuncture, utilize the discussion given after the review questions on page 178.

Sometimes whatever causes the damage to the cochlea or nerves to the brain also damages the balance mechanism. When this occurs, gross motor skills may be slightly delayed and the infant may try to use sight and touch to compensate for damage to the balance mechanism.

A few children have problems in the brainstem or the nerve that carries the sound to the brain. This could happen if there was: (a) bleeding or a blood clot in the brain, (b) a tumor on the nerve, or (c) failure to develop. The sound would come through the ear but the tumor on the nerve would block the sound and it would not go to the brain, or perhaps, the brain would be injured and would not know when sound reached it.

It is also possible that the sound travels from the inner ear to the brain but is not processed correctly along the way. Not much is known about how or why these types of auditory processing problems occur; however, it is suspected that they are a part of some children's hearing problems.

Discussion: Parents will explain the cause of their child's loss, if known. Discuss with the parents the location of their child's hearing problem (point to outer, middle or inner ear and/or brainstem and brain) and the cause (damaged nerves, fluid in the middle ear, combination of both, brain damage, unknown, etc.).

Teaching Strategies. Use the Oakland filmstrip "Anatomy of Hearing Loss," the Zenith illustration "Anatomy of the Ear," or the John Hopkins Human Anatomy Series "The Ear-Hearing and Equilibrium," to illustrate the four parts of the hearing system. Point to each part of the ear on the illustration and what can go wrong with each part as they are discussed. The John Hopkins illustration is available from:

Carolina Biological Supply Co.
2700 York Road
Burlington, North Carolina 27215

The Zenith illustration is available from:

Zenith Hearing Instrument Corp.
6501 West Grand Ave.
Chicago, Illinois 60635

Any illustration that shows all four parts (including brainstem and brain) should be adequate.

Review Questions For Parents

1. What role does the otolaryngologist (ENT, otologist) play? (medical clearance for hearing aid usage)

2. What are the four parts of the hearing system and what is in each part?
(a. outer ear : auricle/pinna and ear canal
b. middle ear: eardrum, three bones, oval window, eustachian tube
c. inner ear: semi-circular canals, cochlea, auditory nerve
d. brainstem and brain)

3. What does the eustachian tube do?
(drain fluid from middle ear to throat, equalize air pressure on both sides of the ear drum)

4. How does sound travel from a sound source to the brain?
(sound pushes eardrum, eardrum pushes three bones, last bone pushes on oval window, push on oval window moves fluid in cochlea, moving fluid in cochlea stimulates the nerves in patterns, patterns travel up the brainstem to the brain)

5. What can go wrong with the four parts of the hearing system?

(a. outer ear: wax plug, canal and/or pinna malformed or absent
b. middle ear: bone broken, middle ear infection, perforation of eardrum
c. inner ear: nerve cells in cochlea damaged or missing, possible damage to balance mechanism
d. brainstem and brain: auditory nerves in brainstem or auditory portion of the brain damaged or failed to develop, blood clot or tumor)

6. What caused your child's hearing loss?

Sample Challenges

Explain the location and cause of your child's hearing loss to your spouse (if not in attendance).

Notes/Supplemental Information: Acupuncture

For the past several years there has been considerable interest by parents of hearing impaired children in the use of acupuncture to improve hearing. It is natural for parents to want to try anything that might benefit their child's hearing. Two studies by Libby (1974) and Katinsky and Durrant (1974), follow patients who decided on their own to try acupuncture. The studies revealed that the greatest percentage of treated ears showed no significant clinical change in hearing for pure tones or speech discrimination ability. In addition, the patients reported no significant improvement in hearing at the completion of the treatments.

PROFESSIONALS INVOLVED WITH THE HEARING IMPAIRED

1. Otolaryngologist is a physician (M.D., D.O.) knowledgeable in diseases of the ear, nose and throat (ENT). His goal is to establish the medical parameters of an individual's hearing loss and offer appropriate treatment recommendations. FTC (Federal Trade Commission) regulations require physician approval prior to the purchase of a hearing aid; the otolaryngologist is the best qualified physician to do this. The intent of the medical examination is to assure that the child's best medical interests are protected prior to the purchase of a hearing aid.

2. Otologist is a physician who is trained in otolaryngology (ENT) and has specialized in problems of the ear.

3. Audiologist is a professionally trained individual with a masters (M.A., M.S.) or doctorate (Ph.D., Ed.D.) degree in Audiology. The audiologist has the basic responsibility for assessing hearing, determining auditory capacity and for increasing the ability of the hearing handicapped individual to cope with the situations of everyday life.

4. Dispensing Audiologist is an audiologist who, in addition to selecting a hearing aid and providing attendant services and subsequent follow-up care, orders the hearing aid and sells it to the patient.

5. Hearing Aid Dispenser is a person with no special training who obtains hearing aids directly from the manufacturer and sells them to patients upon receipt of a prescription from a physician or audiologist. This person does not have direct contact with the patient. Many audiologists now offer this service to patients. Some physicians offer it as well.

6. Hearing Aid Dealer is a hearing aid salesperson providing a retail outlet for hearing aids. A dealer may use the term hearing aid audiologist; however, he may not call himself an audiologist and is not trained to provide audiological services.

Reference and Reading List

Bilger, R. (1977). Evaluation of subjects presently fitted with implanted auditory prostheses. *Ann Otol Rhinol Laryngol, 86,* Suppl. 38.

Glattke, T. (1976). Cochlear implants: technical and clinical implications. *Laryngoscope, 86,* 1351-1358.

Glattke, T. (1981). Some implications for research (chapter 15) in *Hearing aid assessment and use in audiologic habilitation,* 2nd ed. by W.R. Hodgson and P.H. Skinner. Baltimore, MD: Williams & Wilkins.

Katinsky, S. & Durrant, J. (1974). Results of Audiometric study of sensorineural impaired subjects treated with acupuncture, *Journal of American Speech and Hearing Association, 16,* 8.

Libby, E. R. (1974, June 12) Can acupuncture help?, *Hearing Instruments.*

Lesson 4

Measuring Hearing Loss; Preparation for Fitting

Outline/Parent Objectives

I. Parents will explain what an audiogram is, and will describe where pitch and loudness are measured on the audiogram (what the *O* and *X* mean)
  A. Audiogram is a chart/graph of someone's hearing
  B. Pitch (frequency or Hz) is across the top of the chart; dB (loudness) is down the side of the chart
  C. *X* is marked for the left ear and *O* for the right at the dB level where each frequency is heard

II. Parents will explain what their child's audiogram looks like and the amount of hearing loss their child has

III. Parents will describe how the audiologist tests for clarity of hearing and for tolerance
  A. Child points to objects or pictures of what he hears
  B. Audiologist observes child for signs of discomfort at loud levels

IV. Parents will prepare for the hearing aid fitting (body or behind-the-ear)

Materials

1. Flip Chart - wax pencil
2. Audiometer (if possible)
3. Child's own audiogram
4. Zenith record or audio tape, "Getting Through"
5. Patterns for vests, carrier pockets, and/or toupee tape

Lesson

Discussion: Audiogram explanation. The parent advisor may want to use the following simply worded discussion to present the audiogram, X and O markings, and the possible audiometric shapes (configurations of the X's and O's) to the parents.

> "You will remember when your child had his hearing tested, the audiologist wrote down what your child could hear on a paper that looked like this. This is called an audiogram (show audiogram in flip chart, Figure 8). Let's talk about how the audiologist tests hearing and what an audiogram is. When a child has his hearing tested, the audiologist first wants to know what kind of

response your child makes to sound and how loud a sound must be for the child to hear it. First, the audiologist will present sounds informally (usually noisemakers) to determine the kind of response your child makes. Depending on the age of your child, this response may be anything from an eye blink to a repeatable learned response (looking at a flashing light or dropping a toy in a container each time a child hears). The kind of response a child gives usually agrees with his developmental age. Second, the audiologist will put on the earphones like this (demonstrate if have audiometer) to find out how loud sounds need to be for your child to hear. Sound will come through the earphones, or the audiologist will send the sound into some speakers (like stereo speakers). The audiologist will pick one frequency (pitch) like a 1000 Hz tone which is here on the audiogram (show); lower pitches are here, and higher pitches are here. She will send the 1000 Hz sound to your child very softly. This side of the audiogram tells us how loud the sounds are. Very soft sounds are here, very loud sounds are here (point out). So the audiologist gives your child a 1000 Hz sound very softly (maybe 10-15 dB). Your child cannot hear the sound so he does nothing. Then the audiologist makes the sound louder and louder. When your child hears the sound, he will blink or turn his head or raise his hand or in some way let the audiologist know he hears the sound.

If your child hears the sound when it is 80 dB loud, the audiologist will make a mark at 80 dB (point out). If the child hears the sound at 95 dB, the audiologist will make a mark at 95 dB (point out). When the audiologist gives the child a sound in only one ear, the sound goes into just one earphone. If your child hears the 1000 Hz tone in his right ear at 80 dB, the audiologist will make a circle like this (demonstrate with wax pen) at 80 dB. If your child hears this sound in his left ear at 90 dB, the audiologist will make an X like this (demonstrate with wax pen) at 90 dB. The audiologist will then select another pitch (maybe the octave above 1000 Hz or 2000 Hz; point out) and make that sound loud enough for your child to hear it. When she has finished giving your child all the pitches, she will have a picture that looks like this (complete audiogram with wax pen). This audiogram is now complete. If a child does not hear the sound even when it is 110 dB (or 120 dB on some audiometers), the audiologist will not make a mark.

Some people have the same amount of hearing at each pitch. Their audiogram may look like this (Figure 10 in flip chart). This kind of an audiogram may mean the person has a problem in the outer or middle ear. This is called a conductive loss. Some people have different amounts of hearing at each pitch. Their audiogram may look like this (see Figure 11 in the flip chart). This kind of an audiogram usually means there is damage in the inner ear. This is called a nerve loss or sensorineural loss.

The audiologist also utilizes impedance audiometry to help determine what kind of loss (conductive or sensorineural) a person has. The impedance testing may help determine: (a) existing middle ear pressure, (b) tympanic membrane (eardrum) mobility, (c) eustachian tube function, (d) continuity and mobility of the middle ear ossicles (bones), and (e) acoustic reflex thresholds.

Tympanometry is the technique for measuring the compliance (mobility) of the eardrum which in turn gives information about almost any problem in the eardrum or middle ear. For example, if there is negative pressure in the middle ear (thin air example of flying in Lesson 3, page 175), this may cause the eardrum to be pulled in to the middle ear cavity and cause a mild conductive type hearing loss. This information can be detected by impedance testing even though there may be no observable fluid in the child's middle ear.

The acoustic reflex threshold is the level (dB) at which the stapedial muscle contracts. The stapedial muscle is the little muscle in middle ear going from the stapes bone out to the wall of the middle ear. It is known at what level the muscle contracts in normal hearing ears. The level at which reflexes are present (or absent) gives the audiologist additional information about the kind and amount of hearing loss (such as cochlea vs. middle ear). This type of testing is valuable for infants and young children who cannot cooperate fully for other diagnostic tests.

Remember, the pure tone test results may miss a middle ear problem where severe and profound sensorineural hearing loss exists. Therefore, it is important to watch for these with tympanometry and medical check-up of the ears."

If appropriate, the parent advisor should describe how the audiologist determines if the child has a conductive loss (problem in the outer or middle ear) or a nerve loss (problem in the inner ear). For most parents, the explanation will be difficult. Parent advisors may want to give it to interested, educated parents. This discussion is given on page 187 under *Notes/Supplemental Information*.

Discussion: Configuration and amount of child's hearing loss.

"Let's look at your child's audiogram and talk about what he hears. At this very low pitch your child hears at _____ dB. At this higher pitch your child hears at _____ dB.

Of course different people have different amounts of hearing. A person who has normal hearing can hear sounds that are 0-25 dB loud (point out green area, Figure 9 in the flip chart). A person who has a mild hearing loss can hear sounds when they are about 25-40 dB. if the sounds must be 40-70 dB, the person has a moderate loss. If the sounds must be 70-90 dB before a person can hear, that person has a severe hearing loss. A person who has a profound loss hears sounds only when they are 90 dB or louder. Your child's hearing loss is in this area (show).

Discussion: Clarity and tolerance testing.

"In addition to how loud sounds have to be for your child to hear, the audiologist is also interested in how clearly your child hears. For infants, judging how clearly one hears has to be accomplished by long-term observation of responses to sound. As the infant gets older, he will be given tests to determine how clearly he discriminates sounds (environmental) of various frequencies and speech sounds. Your child has to be old enough to point to pictures or objects accurately to do this type of testing. Usually this can be accomplished around the age of three depending on the degree of hearing loss and language development. It is important to get information about the clarity of your child's hearing as soon as possible.

The last area the audiologist looks at is *tolerance*, or in other words, how loud can sounds be before your child gives signs of discomfort. It is important to get this information for each ear separately. If the audiologist cannot obtain a level, she will assume one within the range of safety for your child."

If the child has been evaluated with Brainstem Evoked Response Audiometry (BSER), utilize the discussion under *Notes/Supplemental Information* if appropriate and if parents desire the information.

Discussion: Preparation for the hearing aid fitting. Discuss with the parents ways to keep the hearing aids in place. For infants wearing behind-the-ear hearing aids, the purchase of a double sided adhesive tape, like toupee tape (from any local beauty supply store or barber shop) is recommended. A small piece can be placed on the side of the aid and gently pressed to the head, directly behind the pinna, each time the aids are put on. Also for infants not yet sitting up, a stretchy head band (such as the kind used while playing tennis) can be shortened to fit snugly around the child's head over the hearing aids (being sure to keep the band in front of, not over the microphones). Also, dental floss (or fishing line) can be tied around each aid, then brought together and pinned at the back neck of the shirt to help prevent loss of the aids if accidentally removed.

For infants wearing body hearing aids, it is recommended that parents purchase or make a pocket for the aid to fit in and a vest or harness to hold the pocket.

The pocket should be made of a soft material. If a starched, crisp material is used, it will scratch on the microphone or make noises that will bother the child. Be sure there is a small hole in the pocket over the microphone so the sound can reach the microphone of the hearing aid directly. If no pocket is available the day the aids are obtained, wide masking tape can be utilized to temporarily tape the aids to the child's shirt (as far apart as possible).

Teaching Strategies. Parents can find out what it may sound like to have different amounts of hearing losses by listening to Zenith's record or tape, "Getting Through." If an audiometer is available, demonstrate how loud sounds must be presented for the child to hear them according to the child's audiogram. The hearing aid will make sounds loud so that the child can hear them.

Review Questions For Parents

1. What is an audiogram? (chart/graph of hearing) Where are high and low pitches on the audiogram? (highs: 2000-8000 Hz, lows: 250-500 Hz) Where are soft and loud sounds on the audiogram? (soft: 0-25 dB, loud: 90-120 dB) What does the *O* mean and the *X* mean? (*O* means softest sounds responded for right ear, *X* for the left)

2. What does your child's audiogram look like?
(parent describes configuration)

3. How does the audiologist test for clarity of hearing?
(careful long-term observation for infants; pictures or object-pointing tasks for older children)

4. How will you prepare or purchase a pocket and vest or harness for your child? How will you obtain toupee tape, headband and a method of tying the aids to clothing for your child?

Sample Challenges

None

Notes/Supplemental Information: Conductive vs. Sensorineural Losses and BSER

1. **Determining a Conductive vs. Sensorineural loss.** Use the following discussion for interested, educated parents.

Pure tone *air conduction* thresholds are obtained using standard *earphones*. In air conduction testing, sound must travel through the entire auditory system as shown in Flip Chart Figure 12. In general, if damage to the auditory system exists anywhere, the result will be some degree of hearing loss.

Pure tone *bone conduction* thresholds are measured using a *bone vibrator* which usually fits behind the ear. Vibration from the bone vibrator bypasses the external ear and middle ear and is transferred directly to the cochlea as shown in Flip Chart Figure 13. It is possible to assess the amount of hearing loss contributed by the external ear and middle ear systems versus the amount of loss contributed by the sensorineural system by comparing the air conduction and bone conduction thresholds. For example, if a 40 dB hearing loss exists as revealed by the air conduction thresholds shown in Figure 14, but the bone conduction thresholds are normal (0-15 dB), the problem must necessarily lie in the external and/or middle ear which is referred to as a conductive hearing loss. On the other hand, if the pure tone air conduction and bone conduction thresholds are equivalent as shown in Flip Chart Figure 15, the problem must necessarily lie in or central to the cochlea. Such a hearing loss is referred to as a sensorineural hearing loss. It is, of course, possible for a person to have hearing loss due to both conductive and sensorineural factors in the same ear or to have a conductive loss in one ear and a sensorineural loss in the other ear.

2. **Brainstem Evoked Response Audiometry (BSER).** BSER is an evoked response (to auditory stimulation) recorded via electrodes from the vertex (top of the head) to either mastoid or ear lobe. It is most easily evoked with clicks repeatedly presented and then summated (averaged) by computer analysis. The clicks are not frequency (pitch) specific and thus the evoked potential is

not as specific as an audiogram. The latency of the potential (how long before it occurs after the click) corresponds to specific causes of hearing loss (middle ear vs. cochlea vs. auditory nerve problems). For young infants and difficult to test patients, it is very useful. It does give a reliable indication of the amount of hearing loss (up to the limits of the equipment) for frequencies *above* approximately 1500 Hz. The frequency the potential most likely represents depends on the shape (configuration) of the hearing loss.

Reference and Reading List

Northern, J. L. & Downs, M. P. (1978). *Hearing in children,* (2nd ed.). Baltimore: Williams & Wilkins.

Lesson 5

Parts and Functions of the Aids; Putting on the Aids; Selecting the Best Aids

Outline/Parent Objectives

(For most parents, this information is best presented in a two-week series as designated in the sections below.)

Section 1

I. Parents will show where the different parts of the aids are and what they do
   A. Microphone changes sound into electrical waves
   B. Amplifier makes the electrical waves bigger
   C. Receiver changes the bigger electrical waves back into bigger sound waves
   D. On-off switch turns aid on and off
   E. Battery gives the aid power
   F. Volume control allows for adjustment of loudness
   G. Tone control allows for adjustment in frequency
   H. Telephone switch
      1. T for telephone pick-up or FM unit usage
      2. M for microphone (on) for hearing others and own voice
      3. MT for hearing one's own voice and person wearing FM unit microphone
   I. Cord on body aid takes the bigger electrical waves from the amplifier to the receiver
   J. Earmold fits snugly in ear to prevent feedback and to direct bigger sound waves into the ear canal

II. Parents will demonstrate how to correctly put the hearing aids on their child and begin hearing aid usage leading to 100% wearing time
   A. Body aids
      1. Place harness or vest on child
      2. Place hearing aid in carrier pocket, switches off
      3. Connect mold to receiver
      4. Insert canal of earmold into ear canal with top of earmold rotated forward, then lift pinna and screw into proper place
      5. Move cord out of way (under shirt, etc.)
      6. Turn switches on; telephone switch on M
      7. Set volume control at correct setting
      8. Utilize baby cover, if available

B. Behind-the-ear aids
   1. Connect earmold tubing to neck of aid, line up for correct ear so tubing is straight
   2. Insert canal of earmold into ear canal with top of earmold rotated forward, then lift pinna and screw in the mold
   3. Place hearing aid behind the pinna
   4. Use toupee tape to secure aid to head
   5. Turn switches on; telephone switch to M
   6. Set volume control to correct setting (mark with fingernail polish if there are no numbers)
   7. Use tape over earmold and pinna if needed or use headband around head over earmolds leaving microphone opening uncovered

Section 2

III. Parents will indicate what four major considerations are made when selecting hearing aids
   A. Type of instrument (ear-level, body, etc.)
   B. Frequency (pitch) response
   C. Arrangement (one or two aids, Y cord, etc.)
   D. Maximum power output (maximum loudness of aid)

Child Objectives

1. Child will begin hearing aid usage with final goal being 100% wearing time.

Materials

1. Flip chart
2. Child's hearing aid(s)
3. Battery tester
4. Hearing Aid Wearing Time Checklist (Parent Notebook, Section III)

Lesson (Section 1)

Discussion: Parts and function of the aids. Now that the child is wearing hearing aids, it is important for the parents to understand exactly what a hearing aid is and how it helps their child. The following simplified discussion can be used to explain the parts and functions of the aids.

> "Your child's hearing aid is like any other loud speaker system in a store or church (Flip Chart Figure 16). There is a microphone for the person to talk into. There is an amplifier which makes the sounds of that person's voice louder, and there are speakers where the loud sounds come out for other people to hear.
>
> In your child's hearing aid there is also a *microphone* (show where). This is where the sound comes into his hearing aid. The microphone changes the

sound into electrical waves (Flip Chart Figure 21). The electrical waves then go to the *amplifier* where they are made into bigger waves. We cannot see the amplifier since it is inside the hearing aid. The big electrical waves go to the *receivers* (same as the speakers). These big electrical waves are changed back into big sound waves since our ears hear sound, not electricity, but now the sound is louder since the waves are bigger. Now the child can hear sounds around him because they are louder.

On-Off Switch. The next part of the hearing aid is the on-off switch. It is like the on-off switch on any radio or T.V. It simply turns the hearing aid on and off.

Battery. The battery gives the hearing aid power to make the small electrical waves into big waves. The big waves are louder sounds. Batteries have (+) and (−) ends. The (+) end must match the (+) end inside the battery compartment (show). The (−) end of the battery must match the (−) end inside the battery compartment (show). The name of the battery is not important. The important thing is the right size. This hearing aid needs a battery ________ size. When you go to the store ask for ______________. You can get batteries at drug stores or hearing aid dealers. Make sure they check the batteries before they sell them to you to make sure they are fresh. You can check to make sure the battery is fresh each day by using a battery tester. It works like this (demonstrate). The needle must point 1 or above if the battery is fresh. If the needle is below 1, throw the battery away. The battery will usually last from one to two weeks. Note: For deaf parents, leave a battery tester with them during the week so they will know if the aid is working. Make immediate arrangements for them to purchase one of their own.

Volume Control. This switch makes the sounds that go into the hearing aid louder and louder. Here the sounds are very soft (let parent listen). Here the sounds are louder (parent listens). We will leave the volume on number ______ as recommended by the audiologist. We may have to put the volume switch higher if the sounds are not loud enough for the child, or we may put the volume switch lower if the child acts like the sounds are too loud. You should watch for this. If the child does not respond to any sounds, we can turn the aid up slightly to ______. If the child cries, blinks, jumps, or pulls at his aids when there are sounds, turn the aid down to ______.

Tone Control. Indicate this will be discussed thoroughly next lesson (Section 2), reinforce recommended setting (if external).

Telephone Switch. This switch has three letters on it. When it is on *M*, the child can hear all the sounds around him. When the switch is on *T*, the child would be able to hear a voice coming from a telephone or a FM unit (this will be discussed when appropriate, see page 239). He is too young to worry about using this now. If or when the child uses a personal FM unit, he will put this switch on *MT*. If you (or his teacher) wear an FM unit microphone, the child will hear what is said into the unit's microphone clearly regardless of room noise. He will also hear his own voice through his hearing aid microphones. For now, this switch must always stay on *M* so the child can hear all sounds around him including his own voice.

Cord. The cord is a wire on a body aid that takes the big electrical waves to the receiver. Remember the big electrical waves are changed back to loud sound waves in the receiver so the child can hear them. You must always have an extra cord on hand so when this one breaks, you can put a new one right on. You can buy the cord at ________________________________.

Earmold. The mold fits into the ear and channels the amplified sound down into the ear. It must fit exactly so it will be comfortable. If it is too large, it hurts the ear. If it is too small, the loud sound waves will leak out around the mold (feedback). You will be able to hear these loud sound waves. They sound like this (demonstrate feedback whistle by putting mold and receiver close to microphone for a body type aid or close your hand around an ear-level aid). At first sign of the earmold being too small, a new one should be obtained from your audiologist (or hearing aid dealer). Molds usually cost from $15 to $30. If appropriate, parent advisor should state that she will make new molds for the child when he needs them.

Each morning when you put on your child's hearing aids, it is important that the aid is put on correctly. This is the way it should be done:

Body-type aid. (Demonstrate)

1. Place the harness or vest on your child.
2. Place the hearing aid in the carrier pocket making sure all switches are *off*.
3. Connect the mold to the receiver.
4. Place the ear mold in the child's ear (demonstrate how to insert the canal of the mold with the superior tip of the mold facing forward, then lifting the ear flap up and out and screwing in the mold).
5. Move the cord out of the way.
6. Turn the switches on. Make sure the telephone switch is on M.
7. Put the volume at the correct setting.
8. Put on the baby cover if you have one.

Behind-the-ear-aid. (Demonstrate)

1. Connect the earmold tubing to the "neck" (ear hook) of the aid. Be sure to line up the aid and the mold for the correct ear so that there is no bend or twist in the tubing (demonstrate how to hold the mold up to the ear along with the hearing aid to ensure the mold is facing the correct direction).
2. Place the ear mold in the child's ear; don't worry about the position of the hearing aid while you're doing this part (demonstrate how to insert the

canal of the mold with the superior tip of the mold facing forward; then, lifting the ear flap up and out, screw in the mold).

3. Place the hearing aid behind the earflap (pinna), ensuring that it fits snugly (the length of the tubing needs to be cut just right to ensure proper fit. Using a child size neck/earhook also helps fitting for infants).

4. Cut a small piece of toupee tape and stick it on the side of the hearing aid facing the child's head. Then take off the protective covering of the tape and gently press the aid against the head (try to find the flattest spot behind the earflap and be sure *not* to tape on top of hair).

5. Turn the switches on, making sure the microphone is on *M*.

6. Put the volume at the right number, or if no numbers exist, use fingernail polish or typewriter correction fluid to mark the correct setting. (It is important for the parent to be able to see that the volume control is set correctly until the child is old enough to make this adjustment himself.)

7. Use tape over the earmold and pinna (make an X) for additional help in keeping the earmold in place, *only* if necessary.

8. If necessary, use a soft stretchy headband around the head, going over the earmolds and external ear area, leaving the aid exposed. Be sure the microphone of the hearing aid is not covered up."

Tell the parents the importance of their child wearing his hearing aids as much of each day as possible. Indicate that every hour their child is without a hearing aid he loses "listening time." It takes hearing children about one year of listening time before they start to use language and speech. As much listening time as possible must be given the child by keeping the hearing aids on him.

If appropriate at this point, briefly describe alerting to naturally occurring sounds and reinforcement of all responses to sound. If the child is a profoundly deaf infant or is multi-handicapped, help the parents learn what type of responses to look for (Auditory Program, pages 409–410). Be careful not to overwhelm the parents. Establishing hearing aid usage is usually enough for them to attempt to accomplish during this week. Do mention that the time factor involved for the infant to learn to attend to sounds may be lengthy.

See page 199 for Review Questions For Parents for Section 1.

See page 200 for Sample Challenges for Section 1.

Lesson (Section 2)

If appropriate, use the following discussion to explain to parents the procedures of a trial hearing aid program. If the child already has his own hearing aids, omit this first paragraph.

"Your child's loaner hearing aid is a ______________________ aid. This hearing aid may or may not be the best hearing aid for your child. With what we now know about your child's hearing loss, this is the best aid to start with. However, he is very young, and it is difficult to know exactly what hearing he has. He cannot tell us with words what he can and cannot hear or whether he

> hears better in the left or right ear. The audiologist tries to notice eye blinks, head turning and other actions which tell us that the child hears, but sometimes the child may hear a sound and not respond. We will keep testing your child as he gets older so we will know exactly what he hears in each ear. In the meantime, we will try a hearing aid on his left ear and then his right ear to find out if one ear is better than the other. We will then try about three different hearing aids or hearing aid settings to see which one will help him the most. The audiologist cannot watch your child during the day to see which ear is the best or which hearing aid setting is the best, but you can. After your child is wearing this aid most of each day, we will explain to you how to watch for the sounds he hears and how to write that down."

Discuss with the parents how important it is for their child to wear the aids during all waking hours. Indicate the reasons for this will be discussed fully in the Auditory Program. Have the parents record how long the child wears his hearing aids on the Hearing Aid Wearing Time Form (from the Parent Notebook, section III, page 105). Parents will check how often the child wears the aids each week. See page 103 for specific instructions on the use of this form.

Discuss with parents different methods they can use to determine hearing aid wearing time. The goal is usually all waking hours unless the audiologist has recommended some other amount of wearing time. Therefore, the parents first must decide what constitutes their child's total number of waking hours per day. Help parents determine what times the child wakes up and goes to bed, and eliminate such times as bath time or nap time. Times when the child is ill or hearing aids are broken would not be considered available wearing time.

In order to fill in the Hearing Aid Wearing Time Form each week, parents then can do one of the following:

1. Once a week, before the home visit, the parents can think back over the week, estimate the percent of total waking hours the hearing aids were worn, and check the appropriate box on the form.

2. With the parent advisor's help, the parents can devise a method for keeping track of wearing time each day. They may draw up a chart for marking down the daily wearing time. The day may be divided into segments on the chart in a number of different ways:

Morning — Afternoon — Night
OR
First half of day — Second half of day
OR
By activity: e.g. getting-up time — breakfast — morning activities — lunch — afternoon activities — coming-home activities — bed time
OR
By the hour
OR
By the half-hour

At the end of each week, the parents can look over the daily record and mark the Hearing Aid Wearing Time Form.

Discussion: Four major considerations for selecting hearing aids. There are four major considerations made when selecting hearing aids for trial: (a) the type of instrument (ear-level, body), (b) the frequency (pitch) response, (c) the arrangement of wearable amplification (one or two aids, Y cord, etc.), and (d) the maximum power output (loudness).

Type of Instrument. There are four kinds of hearing aids (Figures 16, 17, 19 and 20 in the flip chart; if desired, explain only the kind that applies to each child): (a) all-in-the ear, (b) over the ear, (c) eyeglass, and (d) body aid.

One important misconception which occasionally still arises is that body aids are best suited for use with all young children regardless of the degree of hearing loss. This was widely accepted when ear-level aids were first utilized. Current clinical data strongly indicate most infants and children to be successful users of ear-level hearing aids. For infants below the age of 6 months or those not able to maintain head control in a sitting position, a body type instrument *might* be preferred. Even for these children, ear level aids should be utilized at least for a trial period.

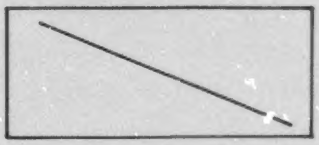
In the rare case where a bone conduction vibrator is recommended due either to presence of a bilateral atresia (ear canals absent) or to medical contraindications for earmold use, the body aid is usually the instrument of choice. Some success has been achieved with the use of an ear level aid either coupled to a bone conduction vibrator's headband or with a velcro strap around the head.

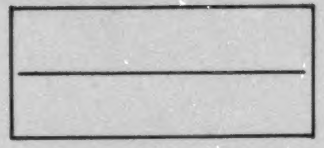
Another consideration for body vs. ear-level amplification is the manual dexterity of the child. For those children with motor handicaps, who will learn to care for their aids themselves, the body aid may allow them to personally manipulate the gain control more easily.

With very young infants when the audiological data is limited concerning the degree of hearing loss in the critical frequencies for the perception of speech (250-4000 Hz), it is important to select a hearing aid which provides maximum flexibility with respect to subsequent modifications of the gain, frequency response, and output. Only in the last few years have ear-level aids been capable of providing this aspect of flexibility so important for fitting infants.

Frequency response. (If desired, explain only the option that applies to each child). Basically there are three options available.

1. A conventional, adjustable frequency response between (350 and 4000) Hz allows for either internal or external control of which pitches will be louder than others (Show parent the type of control their aids have). For example (use Figure 22 in Flipchart), if the child had an audiogram that looked like this that indicates he has an easier time hearing low pitches and a harder time hearing high pitches. The hearing aid should be set to help the child by pushing up the high pitches. If the tone control switch is on *H* (or whatever is used to indicate this type of response emphasis), the high pitches would be pushed up the most.



If the audiogram looks like this that would mean the child only has some hearing in the low pitches but almost no hearing in the high pitches. The hearing aid would be set to push up the hearing that the child has in the low pitches by setting the aid on *L*. If the audiogram looks like this  that indicates the child hears all the pitches about the same. Thus the hearing aid would be set to *N* making all the pitches louder. Ideally the hearing aid will not over-amplify the lower frequencies (which may result in poor clarity (speech discrimination ability) but will provide maximum amplification above 1000 Hz. Indicate to the parents the tone setting selected for their child by the audiologist. Use the child's audiogram to explain why it was chosen.

2. An extended low frequency amplification can be considered if the child has a very limited response to sound with responses being obtained only for the lowest pitches. Since critical acoustic information (for hearing speech) below 300 Hz is limited, the utilization of extended low frequency amplification is restricted to those children with fragmentary hearing losses (no residual hearing above 500-750 Hz).

3. A high-pass effect where there is little amplification below 1000 Hz is utilized for children with essentially normal hearing in the lower test frequencies but a significant loss for the high frequencies. Special earmolds utilized with this type of frequency response allow the child to hear the high frequencies without making the low frequencies too loud.

Arrangement of wearable amplification. For body type hearing aids, there are three possible fittings: (a) a Y-cord, (b) a single cord, or (c) a binaural (two aids) arrangement. The use of a Y-cord is usually appropriate only on a trial period until detailed audiological information is available for each ear. The audiologist may recommend obtaining two earmolds and alternate use of a single cord between ears until a preference for one ear or improved listening with sound in one particular ear can be detected. The potential benefits of binaural body aids should be carefully considered at least during the trial period.

With ear-level hearing aids it is easier to demonstrate that binaural arrangements are almost always the best choice for children with moderate or more amount of hearing loss. Binaural aids not only provide better speech discrimination ability (particularly in noisy situations) but also the sound quality and the sense of listening space (results from hearing on both sides of the head) are significantly improved.

Maximum power output. This setting is made by the audiologist based on tolerance test results and on the knowledge that the output of aids should under most circumstances be set no higher than 125 dB (sound pressure level). Point out the MPO control if visible.

For children in the profound hearing loss range, this level is sometimes exceeded and provisions for audiological *monitoring* are imperative, especially during the initial months of hearing aid utilization. In a few cases, disregarding the maximum power of the aid results in temporary or permanent shift (loss) in hearing.

The audiologist also has the option of controlling the maximum power of the aid internally. The decision whether or not to use this setting, usually called compression, will be made on the basis of tolerance data and experience with utilization of high power instruments. One advantage of compression amplification is that it may alleviate the need to adjust and readjust the volume control every time the level of environmental noise changes (point out compression control, if visible).

Teaching strategies. It is not necessary to give all of the information in every discussion to every parent. Select the information relevant to their child and to their needs. Some of the information may need to be repeated later; for example, just before a visit to the audiologist, etc.

Review Questions For Parents

Section 1

1. What do the microphone, amplifier and receivers do?

(microphone changes sound into electrical waves, amplifier makes the electrical waves bigger, receiver changes the bigger electrical waves back into bigger sound waves)

2. Have parents demonstrate how to put the hearing aid on their child.

3. Have parents point out and explain the function of the hearing aid parts.

(battery gives the aid power; volume control allows for adjustment in frequency [pitch, Hz]; telephone switch (1) T for telephone pickup or FM unit usage, (2) M for microphone "on" for hearing others and one's own voice, (3) MT for hearing one's own voice and person wearing FM unit microphone; cord on body aid takes the bigger electrical waves from the aid [amplifier] to the receiver; earmold fits snugly in ear to prevent feedback and to direct bigger sound waves into the ear canal)

Section 2

1. What are the four major considerations made when selecting hearing aids?

(type of instrument [ear-level, body]; frequency response; arrangement [one or two aids, Y cord, etc.]; maximum power output [maximum loudness aid will go to])

2. If trial period: How will we know which hearing aid will help your child the most or if he hears better in one ear than the other?

(trial period with hearing aids, or different settings on the same aid; and observation of child with one ear then the other ear aided)

3. If appropriate: Why is it difficult to know exactly how much your child hears now?

(he cannot tell us in words how/what he hears in each ear)

Sample Challenges

Section 1

1. Each morning, put the hearing aid on your child correctly (as discussed in this lesson).

Section 2

1. This week your child will wear his hearing aids at least ______ hours.
2. Use the Hearing Aid Wearing Time Checklist (from Parent Notebook, Section III) to record how long your child wears his aids.

References and Reading List

Matkin, N. D. (1981). Hearing aids for children (Chapter 9) in *Hearing aid assessment and use in audiologic habilitation*, 2nd ed. Ed. by W.R. Hodgson and P.H. Skinner. Baltimore: Williams & Wilkins.

Lesson 6

Daily Listening Check;
Downs' Approach if Necessary

Outline/Parent Objectives

I. Parents will correctly review the parts and functions of their child's hearing aids
  A. Microphone changes sound into electrical waves
  B. Amplifier makes the electrical waves bigger
  C. Receiver changes the bigger electrical waves back into bigger sound waves
  D. On-off switch turns aid on and off
  E. Battery gives the aid power
  F. Volume control allows for adjustment of loudness
  G. Tone control allows for adjustment in frequency (pitch, Hz)
  H. Telephone switch
    1. T for telephone pick up or FM unit usage
    2. M for microphone ("on") for hearing others and one's own voice
    3. MT for hearing one's own voice and person wearing FM unit microphone
  I. Cord on body aid takes the bigger electrical waves from the amplifier to the receiver
  J. Earmold fits snugly in ear to prevent feedback and to direct bigger sound waves into the ear canal

II. Parents will demonstrate the daily listening check correctly (utilizing Daily Listening Check handout as a guide)

III. Parents will explain how to use Marion Downs' "Establishment of Hearing Aid Use" if necessary

Child Objectives

1. Child will increase hearing aid wearing time leading to full-time usage.

Materials

1. Daily listening check handouts for ear-level or body aids
2. Downs' approach, "Establishment of Hearing Aid Use" if necessary
3. Defective hearing aid kit (if desired and available)
4. Slide and audio tape presentation "Hearing Aids: A Daily Check" available from: Design Media, 327-17th Street, Oakland, California 94612, (415-832-0848).

Lesson

Discussion: Review of parts and functions of aids. Discuss again with the parents the parts of the child's aids and their functions. Review this information as often as necessary so that the parents become comfortable with all the parts and their functions. For example, it is important that the parents understand the telephone switch so that the aids will not be accidentally worn on *MT* or *T* when inappropriate.

Discussion: Daily listening check. Indicate to the parents the importance of keeping the parts of the hearing aids working all the time. The Daily Listening Check is designed so that the parents can determine on their own if the hearing aids are working. This check should be accomplished daily, just before the aids are first put on the child. There are daily checks for body aids, ear-level aids, and for hard of hearing and deaf parents on the following pages. Have the parents demonstrate the appropriate daily check and then give them a handout of the appropriate check to keep and use as a guide.

DAILY LISTENING CHECK FOR BODY AID

1. Check to make sure the battery is fresh. Remember if your battery tester points to 1.0 or less, the battery is no longer fresh. You should throw it away and put in a fresh one.

2. Put the battery in the hearing aid. Make sure the (+) end of the battery matches the (+) end in the hearing aid and the (−) end of the battery matches the (−) end in the hearing aid.

3. Make sure the on-off switch is on *off*. Put the volume control at the lowest number. Make sure the M, T, MT switch is on *M*.

4. Put the receiver in your ear. Cover the receiver with the palm of your hand. Do not press the receiver too hard.

5. Turn the on-off switch to *on*.

6. Slowly turn the volume control up louder and louder. Say sounds across the frequency range /u/, /a/, /i/, /ʃ/, /s/ *(oo, ah, ee, sh, s)*. As soon as the child can, have him clap his hands when he hears the sounds spoken by the parent within the distance the child can normally hear them.

Listen for:	**What to do:**
a) The hearing aid does not get louder and louder.	a) Make sure the telephone switch is on *M*. Make sure the battery is *fresh*. If the sound still does not get loud, call the audiologist (or hearing aid dealer) and ask for a loaner hearing aid while the broken aid is being repaired.
b) The hearing aid goes on and off.	b) Call the audiologist (or dealer) and get a loaner aid while the broken aid is being repaired.
c) The hearing aid has a loud scratchy sound in it.	c) Same as *b* above

7. Roll the cord back and forth between your fingers.

Listen for:	**What to Do:**
a) The hearing aid goes on and off.	a) Put on a new cord.

8. Tap the hearing aid gently on all sides and gently shake the hearing aid.

Listen for:	**What to Do:**
a) The hearing aid loses power (it gets softer).	a) Call the audiologist (or dealer) and ask for a loaner aid while the broken aid is being repaired.
b) You hear a rattling sound caused by loose screws.	b) Same as a above.

9. Check the earmold for wax in the opening.

	What to Do:
	a) Push wax out with a pipe cleaner or pin.

DAILY LISTENING CHECK FOR EAR-LEVEL AID

1. Check to make sure the battery is fresh. Remember if your battery tester points to 1.0 or less, the battery is no longer fresh. You should throw it away and put in a fresh one.

2. Put the battery in the hearing aid. Make sure the (+) end of the battery matches the (+) end in the hearing aid and the (−) end of the battery matches the (−) end in the hearing aid.

3. Make sure the on-off switch is on *off*. Put the volume control at the lowest number. Make sure the M, T, MT switch is on *M*.

4. Put the earmold in your ear. Cover the earmold with the palm of your hand and let the hearing aid fall away as much as possible (or use a stethoscope—parent advisor demonstrates).

5. Turn the on-off switch to *on* or turn the volume wheel barely on.

6. Slowly turn the volume control up louder and louder. Say sounds across the frequency range /u/, /a/, /i/, /ʃ/, /s/ (oo, ah, ee, sh, s). (As soon as the child can, have him clap his hands when he hears the sounds spoken by the parent within the distance over which the child can normally hear them).

Listen for:	**What To Do:**
a) The hearing aid does not get louder and louder.	a) Make sure the telephone switch is on *M*. Make sure the battery is *fresh*. If the sound still does not get loud, call the audiologist (or hearing aid dealer) and ask for a loaner hearing aid while the broken aid is being repaired.
b) The hearing aid goes on and off.	b) Call the audiologist (or dealer) and get a loaner aid while the broken aid is being repaired.
c) The hearing aid has a loud scratchy sound in it.	c) Same as *b* above.

7. Tap the hearing aid gently on all sides and gently shake the hearing aid.

Listen For:	**What To Do:**
a) The hearing aid loses power (it gets softer).	a) Call the audiologist (or dealer) and ask for a loaner aid while the broken aid is being repaired.
b) You hear a rattling sound caused by loose screws.	b) Same as *a* above.

8. Check the tube fo[illegible]end, twist, hole or crack.

Listen For:	**What To Do:**
Muffled or no sound.	a) Untwist the tube. b) Replace tube or hook. Use thick walled tubing.

9. Check the earmold for wax in the opening.

Listen For:	**What To Do:**
Muffled or no sound	a) Push wax out with a pipe cleaner or pin.

HEARING AID DAILY CHECK FOR HARD OF HEARING AND DEAF PARENTS

If this lesson is being taught to hard of hearing parents or deaf parents: (a) see if there is a hearing sibling or relative who can learn the daily listening check and teach it to them, or (b) if not, have the parents follow the procedures on the following handout.

For Hard of Hearing Parents

1. Make sure the battery is fresh. If the battery is less than 1.0 on the battery tester, throw it away.
2. Make sure all the controls are off. The mike-telephone switch should be on *M*.
3. Put the receiver to your ear and cover it with your palm. Turn the aid on and turn the volume switch up. Is the aid working? Do sounds get louder? If not, send the aid to the audiologist (or hearing aid dealer) with a note asking for a loaner.
4. Look at the cord. Are there any breaks or holes in the cord? If so, put on a new cord.
5. Look at the controls. Is there food or dirt in them? Are the controls stuck so they will not turn on and off? If so, clean with a toothpick or q-tip or small pipe cleaner.

For Deaf Parents

1. Make sure the battery is fresh. If the battery is less than 1.0 on the battery tester, throw it away.
2. Make sure all the controls are off. The mike-telephone switch should be on *M*.
3. Look at the cord. Are there any breaks or holes in the cord? If so, put on a new cord.
4. Look at the controls. Is there food or dirt in them? Are the controls stuck so they will not turn on and off? If so, clean with a toothpick or q-tip or small pipe cleaner.
5. Put the hearing aid on your child. Turn it to the right volume setting.

Discussion: M. Downs' "Establishment of Hearing Aid Use." If the child is rejecting the hearing aid, explain to the parents Marion Downs' "Establishment of Hearing Aid Use." Basically the approach entails:

Week 1. Put the hearing aid on the child (without turning it on) for 5 minutes, 4 times each day. Play quietly and lovingly with the child while the aid is on. Hold down his arms and legs gently but firmly if necessary.

Week 2. Put the hearing aid on 15 minutes, 4 times each day at one-third the desired volume. Point out pleasant sounds.

Week 3. Put the hearing aid on 30 minutes, 4 times a day a little above one-third volume. Call the child's attention to sounds as you work around the house.

Week 4. Put the hearing aid on 45 minutes, 4 times a day. Setting should be almost at right loudness level.

Week 5. Put on the hearing aid 1 hour, 4 times a day. Aid should be at the right loudness level.

Week 6 and thereafter. Increase wearing time until the child is wearing aid all waking hours.

At this point it may be necessary to address the possibility of parental ambivalence toward the use of hearing aids. If this is a part of the problem of establishing hearing aid usage, the best approach may be to dialogue directly with the parents about their feelings and again stress the importance of the role they play in whatever success their child achieves. The programming will not benefit their child without their efforts.

Teaching strategies.

1. Have parents continue to use the Hearing Aid Wearing Time Checklist (from Parent Notebook, Section III) to determine how long the child wears the hearing aids each week.

2. Use a defective hearing aid kit (if available) to demonstrate problems to be listened for in the Daily Listening Check.

3. After going over the Daily Listening Checklist, use the slide-tape presentation, "Hearing Aids: A Daily Check," to emphasize the importance of routinely checking the aids.

Review Questions For Parents

1. Parents complete the daily listening check.
(ear-level aids, page 205, body aids, page 203)

2. Parents will explain how they will use Downs' "Establishment of Hearing Aid Use" if necessary.
(this week put the hearing aid on for 5 minutes, 4 times each day playing quietly and lovingly during this time; gently prevent the child from removing the aid; see above for weeks 2-6)

Sample Challenges

1. Perform daily listening check each day just before putting the aids on the child. During these first weeks, call parent advisor for advice for any problems.

2. Keep aids on the child 100% of waking hours.

3. Keep aids on the child all waking hours, except for two 20 minute rest periods as recommended by audiologist due to extra high power output being utilized.

4. Keep aid on right ear only during all waking hours.
5. Increase wearing time from 50% (last week) to at least 75% time this week.

Reference and Reading List

Downs, M. P. (1966). The establishment of hearing aid use: A program for parents. Maico Audiological Library Series 4:V.

Lesson 7

Care of the Hearing Aids; Trouble Shooting for Feedback Source

Outline/Parent Objectives

I. Parents will review the daily listening check utilizing the Daily Listening Check handouts (see pages 203–207)

II. Parents will demonstrate how to take proper care of the:

- A. Battery
  - 1. Correct size
  - 2. Material
  - 3. Remove when aid is off
  - 4. Remove when dead
  - 5. Purchase only 2 month supply
  - 6. Keep in cool, dry place
  - 7. Do not leave on metal surface
  - 8. Carry extras in original package
  - 9. Keep safe from small children
- B. Controls, switches, microphone
  - 1. Avoid food, dirt
  - 2. Wear body aids under soft clothing
  - 3. Clean aids once a year
  - 4. Avoid catching switches on clothing
- C. Cord (body aids only)
  - 1. Do not bend, knot or chew
  - 2. Channel cord out of child's way
  - 3. Disconnect by pulling on plastic end (not on cord itself)
- D. Receiver (body aids only)
  - 1. Do not drop or bang
  - 2. Check for rough spots
- E. Earmold and plastic tubing
  - 1. Keep clean, check each night
  - 2. Check for rough spots
- F. Earhook (neck)
  - 1. Keep clean
  - 2. Screw on securely

G. Body of hearing aid
    1. Avoid placing in very cold or hot places
    2. Do not put in water
    3. Do not drop or bang

III. Parents will demonstrate how to trouble-shoot for the source of feedback (utilizing "Trouble Shooting For The Source of Feedback" handout as a guide)

IV. Parents will observe and record data on the "Home Hearing Aid Evaluation for Parents" handout during trial amplification period if appropriate

Child Objectives

1. Child will demonstrate acceptance of his hearing aids during all waking hours or during time recommended by the audiologist

Materials

1. Child's hearing aids
2. "Home Hearing Aid Evaluation for Parents" handout page 219

Lesson

Discussion: Care of the hearing aids. After reviewing the daily listening check, state that the best way to keep the hearing aids working properly is to take care of them. Discuss the care of the hearing aids including the following information.

Care of the batteries. There are different sized batteries for different aids. Batteries are made from different types of materials.Help parents compare the cost, battery life and power of the different types of batteries that will fit in the child's aid. Remember, the exact length of time a battery lasts depends on the particular aid in which it is used.

Silver Oxide: 1.5 volts, contains the chemical silver oxide, loses power after about 30-50 hours and is the most powerful (most expensive).
Mercury: 1.4 volts, contains the chemical mercury and loses power after about 40-60 hours (considered more poisonous).
Rechargeable Nicad: 1.4 volts, contains the chemicals nickel and cadmium, dies after 4-6 hours, can be recharged for another 4-6 hours about 1000 times. You need to have 3 of these batteries to conveniently use and recharge them. They last about a year.
Zinc-air: 1.4 volts, contains zinc and air and loses power after 80-120 hours (most popular).

The battery will last longer if taken out of the hearing aid when the aid is not being used. Remove a dead battery from the aid right away as it could leak and damage the aid. Do not keep many extra batteries. Get enough for only two months (or one package) at a time. Indicate about how many batteries that would be--two extra batteries if the aid holds one battery, three to four extra if the aid holds two batteries. Keep batteries in a cool, dry place. Make sure they are dry before used. Do not leave batteries on metal furniture or shelves or carry them in a pocket or purse with coins. Carry extra batteries in their plastic package to increase their life.

Care should be taken when disposing of dead batteries. Some companies will pay for them and use some of the material again. Be sure to keep them safely away from small children as swallowing them is poisonous (mercury is lethal if ingested). See "Notes/Supplemental Information" on page 218 for details on this topic.

The overall cost of batteries depends on the amount of power needed (the volume setting), how many hours the hearing aid is worn, the particular size of battery needed, and the material (mercury, etc.), where the batteries are purchased, and how well the batteries are cared for. Check locally and let the parents know the approximate cost of the needed batteries as well as the various options available to locate them.

Controls, switches, and microphone. Care must be taken to avoid getting food and dirt in the controls, switches or the microphone. If a body aid has a baby cover, explain to the parents how the cover keeps the food and dirt out of the controls and switches. The aid can be worn under a shirt if the cloth is very soft. Rough cloth will scratch against the hearing aid and make loud scratchy sounds that will bother the child. After parents purchase aids, remind them that all aids should be cleaned each year. (The audiologist or hearing aid dealer can send the aids to the factory for this service and provide loaners.)

For ear-level hearing aids, care must be taken to avoid getting the switches caught on clothing and hats. Most ear-level controls are now placed along the top or underneath side of the aid. If the aids in use have switches located at the end, take care they do not get moved or changed by the child's shoulders.

Care of cord. It is easy to break the cord. It is important not to bend the cord too much or knot it. A child should not be allowed to bite or chew the cord. If the child is a cord chewer: (a) make small button holes in the vest directly above the hearing aid to channel the cord under clothing and out at the shoulder, or (b) channel the cord from his front,under his arm, up his back, and to his ear, or (c) have parents obtain shorter cords, or (d) pin cord down (safety pin goes around cord not through it), or (e) obtain thumb spray or another unpleasant tasting spray from drugstore and spray on the cord, or (f) put hearing aid on back of child and channel cord up to ear (last resort).

Pull out the cord by pulling on the plastic end. Do not pull on the cord itself (demonstrate).

Care of the receiver. The receiver should not be dropped or banged. The receiver is very fragile and expensive. Leave receiver savers (obtained from audiologist or hearing aid dealer) with the family. The receiver saver connects the receiver to the cord so the receiver will not fall off the cord).

Care of the earmold and plastic tubing. The earmold and plastic tubing should always be clean. If there is any dirt in the canal hole or tubing, it will block the sound so it can't get to the ear. Demonstrate how to remove the mold (and tubing on ear-level aids) and wash with warm water and soap (do not use alcohol). It is best to check the mold to see if it is dirty *each night*. The mold needs to be washed at night and allowed to dry until morning. If the mold does not have enough time to dry, the water will stop the sound from going to the ear. (An air squirting bulb can be used to dry the mold and tubing and is available from auditory supply companies.) Sometimes you can get the dirt and wax out of the mold hole by using a toothpick or a small pipe cleaner. Demonstrate this for the parents.

On occasion, an earmold will have a rough spot or bump that may cause a sore inside the ear canal. The rough part can be filed off by the audiologist (or hearing aid dealer). If the spot is minor, it may be possible to smooth it with an emery board. If this happens, wait until the ear is not sore (2-3 days) before putting the hearing aid on again.

Care of the earhook ("neck"). The earhook on ear-level aids must be kept clear as dirt or moisture will block the sound from getting to the ear. If removable, unscrew the neck from the aid and clean with warm water and soap (let dry thoroughly). If not removable, clean with a pipe cleaner or a toothpick. Be sure the earhook connects securely to the aid. Have an audiologist (or dealer) replace it when indicated.

Care of the body of the hearing aid. Indicate to the parents not to do three things to the hearing aid, (a) put it in a very cold or very hot place, (b) put it in water, (c) drop it or bang it.

Indicate to the parents that if they take good care of the hearing aids, the aids will work better and longer. Thus their child will have good, continuous hearing time because his aids will not be broken. There is another way to make sure their child has good, continuous hearing time. If his molds are too small or the canal portion too short, the sound leaks out around the molds and causes feedback (whistle sound). Demonstrate feedback sound for the parents. For body aids, the feedback may also occur between the receiver and the mold. For ear-level aids, it may also occur between the tubing and earhook or between the earhook and the aid. Or there may be something wrong inside the aid (body or ear-level) that will cause feedback. When parents hear feedback, they should not turn down the hearing aid to make the whistle go away. If the aid is turned down, it will no longer provide enough loudness for the child to hear sounds very well. When this happens, continuous listening time is reduced. It is better to get new molds that fit or fix the hearing aid instead of turning it down. When feedback occurs, find out where the whistle is coming from and then fix it. Give the parents the following handout "Trouble Shooting For The Source of Feedback." (Note: Some programs may wish to put the Daily Listening Check For Body Aids and the Trouble Shooting Information On Body Aids on a parent handout and the Daily Listening Check and Trouble Shooting For Ear-level Aids on another parent handout.) Go over it with the parents and have them practice the steps.

TROUBLE SHOOTING FOR THE SOURCE OF FEEDBACK

Body Aid

1. Take the hearing aid off the child. Keep the hearing aid on the loudness setting it is already on. Put a finger over the end of the earmold canal hole. If the whistle goes away the mold is too small. Have the parent advisor (or audiologist or dealer) make a new mold impression.

2. If the whistle does not go away, take off the mold and put a finger over the receiver hole. If the whistle goes away, ask the parent advisor about obtaining a plastic washer. This washer will help stop the sound from leaking out between the receiver and mold.

3. If the whistle still does not stop, the hearing aid is broken. Send it back to the audiologist or dealer and ask for a loaner hearing aid.

Ear-level Aid

1. Take the hearing aid off the child. Keep the hearing aid on the loudness setting it is already on. Put a finger over the end of the mold hole. If the whistle goes away the mold is too small. Have a new mold impression made for the child.

2. If the whistle does not go away, take off the mold and put your finger over the earhook (neck). If the whistle goes away the whistle is due to leakage of sound between the mold and earhook. Check the tubing. Replace it if it is cracked or hard.

3. If the whistle still does not stop, the hearing aid is broken. Send it back to the audiologist or dealer and ask for a loaner hearing aid.

When teaching deaf parents who cannot hear the feedback whistle, tell someone who is hearing (sibling or friends) to inform the parents (or parent advisor) when the feedback whistle occurs. If this is not possible, listen for the whistle at each home visit and take appropriate action.

If the hearing aid is accepted at this time (at least half of the child's waking hours), begin the hearing aid evaluation program (appropriate only for children on trial period amplification). This is the program of trying one aid on one ear and then on the other ear, followed by binaural (two aids) usage. Observation of the child under these arrangements of amplification will greatly aid in the final selection of amplification by the audiologist. When appropriate, several different sets of aids or different settings (tone, maximum power, etc.) on one pair of aids can then be tried. Parents begin keeping data on how the child responds to different aids by using the form "Home Hearing Aid Evaluation For Parents." This handout is on page 219. Use the Auditory Program material to help the parent look for responses appropriate for the child's age level (page 386). Give the parents the form and discuss it, utilizing the following guide.

1. What sound does he hear? How do you know he hears these sounds?
   Example: (1) He heard the car honk, he turned his head.
   (2) He heard the blender, he looked up.
   (Write this down when it occurs. If it occurs often, write a brief summary at the end of the day.)
2. What does he say?
   Example: (1) Ma-ma, ba-ba. (Write this down when it occurs. If it occurs often, write a brief summary at the end of the day).

3. Attitude—Does the child like his hearing aid? Does he seem to enjoy it? (Write this down at the end of the day).

Be sure parents continue to record how long the child wears his aids on the "Hearing Aid Wearing Time Checklist" (Parent Notebook, Section III) until the child wears amplification all of his waking hours.

Teaching strategies.

1. Immediately after demonstrating proper care of each part of the hearing aid, review by naming each part and asking the parents to state or demonstrate the proper care. Review these again at the beginning of the next lesson and as often as the need arises throughout the program.

Review Questions For Parents

1. How do you care for:
   a. battery (correct size, remove when off or dead, purchase only two month supply, store in cool, dry place, avoid metal surfaces, carry extra in original package, keep safe from small children)
   b. controls, switches and microphone (avoid food, dirt, catching on clothes; wear under soft clothing, clean once a year)
   c. cord (do not bend, knot, chew; channel out of child's way, disconnect by pulling on plastic end piece)
   d. receiver (do not drop or bang, use receiver savers)

    e. earmold and plastic tubing (keep clean daily, check for rough spots)
    f. earhook (keep clean, screw on securely)
    g. body of aid (avoid placing in very cold or hot places, avoid water, do not drop or bang)

2. Parents demonstrate trouble-shooting for source of feedback (see page 215)
3. What will you observe and record on the "Home Hearing Aid Evaluation For Parents" form?

(sounds heard and the responses, example of vocalizations, and attitudes)

Sample Challenges

1. Clean earmolds and tubing each night.
2. When appropriate, check for source of feedback.
3. Achieve 100% wearing time for aids.
4. Do daily listening checks every day because the child cannot indicate when something is wrong with his aids.

Notes/Supplemental Information: Battery Hazards

A child can experience severe injury or even die by swallowing a hearing aid battery. Although a battery usually passes through the body without adverse consequences, the National Capital Poison Center has reported two deaths from swallowing batteries, and several instances in which severe esophageal injury resulted in a permanent inability to swallow food. The Poison Center attributes these injuries and deaths to the difficulty of removing batteries from the esophagus.

The following preventive measures will lower the risk of battery related deaths and injuries: Batteries should not be changed in the presence of children, and unused batteries should be kept in a childproof place; children should not be allowed to play with batteries and battery cases; used batteries should be thrown away; and the surface of the battery should be coated with a bitter-tasting solution to discourage children from placing the device in the mouth. A battery registry is also available at the National Capital Poison Center. For further information, contact the registry at the National Capital Poison Center, 3800 Reservoir Rd., Washington, D.C. 20007 (202) 625-3333 (voice); 625-6070 (TTY).

When teaching deaf parents who cannot hear the feedback whistle, tell someone who is hearing (sibling or friends) to inform the parents (or parent advisor) when the feedback whistle occurs. If this is not possible, listen for the whistle at each home visit and take appropriate action.

If the hearing aid is accepted at this time (at least half of the child's waking hours), begin the hearing aid evaluation program (appropriate only for children on trial period amplification). This is the program of trying one aid on one ear and then on the other ear, followed by binaural (two aids) usage. Observation of the child under these arrangements of amplification will greatly aid in the final selection of amplification by the audiologist. When appropriate, several different sets of aids or different settings (tone, maximum power, etc.) on one pair of aids can then be tried. Parents begin keeping data on how the child responds to different aids by using the form "Home Hearing Aid Evaluation For Parents." This handout is on page 219. Use the Auditory Program material to help the parent look for responses appropriate for the child's age level (page 386). Give the parents the form and discuss it, utilizing the following guide.

1. What sound does he hear? How do you know he hears these sounds?
   Example: (1) He heard the car honk, he turned his head.
   (2) He heard the blender, he looked up.
   (Write this down when it occurs. If it occurs often, write a brief summary at the end of the day.)
2. What does he say?
   Example: (1) Ma-ma, ba-ba. (Write this down when it occurs. If it occurs often, write a brief summary at the end of the day).

3. Attitude—Does the child like his hearing aid? Does he seem to enjoy it? (Write this down at the end of the day).

Be sure parents continue to record how long the child wears his aids on the "Hearing Aid Wearing Time Checklist" (Parent Notebook, Section III) until the child wears amplification all of his waking hours.

Teaching strategies.

1. Immediately after demonstrating proper care of each part of the hearing aid, review by naming each part and asking the parents to state or demonstrate the proper care. Review these again at the beginning of the next lesson and as often as the need arises throughout the program.

Review Questions For Parents

1. How do you care for:
   a. battery (correct size, remove when off or dead, purchase only two month supply, store in cool, dry place avoid metal surfaces, carry extra in original package, keep safe from small children)
   b. controls, switches and microphone (avoid food, dirt, catching on clothes; wear under soft clothing, clean once a year)
   c. cord (do not bend, knot, chew; channel out of child's way, disconnect by pulling on plastic end piece)
   d. receiver (do not drop or bang, use receiver savers)

    e. earmold and plastic tubing (keep clean daily, check for rough spots)
    f. earhook (keep clean, screw on securely)
    g. body of aid (avoid placing in very cold or hot places, avoid water, do not drop or bang)

2. Parents demonstrate trouble-shooting for source of feedback (see page 215)
3. What will you observe and record on the "Home Hearing Aid Evaluation For Parents" form?

(sounds heard and the responses, example of vocalizations, and attitudes)

Sample Challenges

1. Clean earmolds and tubing each night.
2. When appropriate, check for source of feedback.
3. Achieve 100% wearing time for aids.
4. Do daily listening checks every day because the child cannot indicate when something is wrong with his aids.

Notes/Supplemental Information: Battery Hazards

A child can experience severe injury or even die by swallowing a hearing aid battery. Although a battery usually passes through the body without adverse consequences, the National Capital Poison Center has reported two deaths from swallowing batteries, and several instances in which severe esophageal injury resulted in a permanent inability to swallow food. The Poison Center attributes these injuries and deaths to the difficulty of removing batteries from the esophagus.

The following preventive measures will lower the risk of battery related deaths and injuries: Batteries should not be changed in the presence of children, and unused batteries should be kept in a childproof place; children should not be allowed to play with batteries and battery cases; used batteries should be thrown away; and the surface of the battery should be coated with a bitter-tasting solution to discourage children from placing the device in the mouth. A battery registry is also available at the National Capital Poison Center. For further information contact the registry at the National Capital Poison Center, 3800 Reservoir Rd., Washington, D.C. 20007 (202) 625-3333 (voice); 625-6070 (TTY).

HOME HEARING AID EVALUATION FOR PARENTS — **Hearing Aid** ______________ **Child** ______________ **P.A.** ______________

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THRUSDAY	FRIDAY	SATURDAY
What sounds did the child respond to, how did he respond, how often did he respond.							
What vocalizations did the child make; how often.							
Attitude and opinions of parents, attitude of child.							
What sounds did the child respond to, how did he respond, how often did he respond.							
What vocalizations did the child make; how often.							
Attitude and opinions of parents, attitude of child.							
What sounds did the child respond to, how often did he respond.							
What vocalizations did the child make; how often.							
Attitude and opinions of parents, attitude of child.							

Lesson 8

Review of Lessons 1-7;
Downs' "Maintaining Child's Hearing Aid" (Revised)

Outline/Parent Objectives

I. Parents will better understand all previous objectives in Lessons 1-7
   A. Lesson 1 — Hearing for Language: Sound
      1. Why sound is so important
         a. Language
         b. Physical sensory deprivation
         c. Psychological sensory deprivation
         d. Warning
      2. How sound is made
         a. Moving source
         b. Medium for the moving source - air
      3. How sound travels through the air
         a. Air molecules pushed by source, then spread out again
      4. Definitions
         a. Frequency-pitch of a sound
         b. Hertz-new name for frequency (pitch), Hz
         c. Decibel (dB)—loudness (intensity) of a sound
   B. Lesson 2 — Perception of Speech
      1. How speech sounds are recognized
         a. Primarily through auditory cues, but also through vision and touch
      2. How perception of speech is affected by:
         a. The speaker's pitch
            (1) Men have lowest pitches
            (2) Women's are higher
            (3) Children's are highest
         b. Connection to other speech sounds
            (1) Individual sounds are modified by the sounds next to them
            (2) Changes in intonation and pitch change the meaning
         c. Listening environment
            (1) Loudness of conversational speech fluctuates rapidly (between 30-60 dB)
            (2) Background noise is often present

3. Sensitivity required for full audibility (loud enough to be heard) and how much louder it must be than background noise
    a. Hearing at 30 dB hearing level is required for full audibility
    b. Speech must be at least 18 dB louder than background noise and 30-40 dB louder would be ideal

C. Lesson 3 — Otological Care; Anatomy of the Ear; Causes and Types of Hearing Losses
  1. Various medical personnel available to child for continued medical care
    a. Otolaryngologist or otologist gives medical clearance for wearable amplification
    b. Continued, periodic medical follow-up is necessary
      (1) To detect and treat middle ear infections
      (2) To detect progressive hearing loss
      (3) To evaluate a balance problem
  2. Four parts of the hearing system and what is in each part
    a. Outer ear
      (1) Auricle/pinna
      (2) Ear canal
    b. Middle ear
      (1) Eardrum
      (2) Bones: malleus, incus, and stapes
      (3) Oval window
      (4) Eustachian tube
    c. Inner ear
      (1) Semi-circular canals
      (2) Cochlea
      (3) Auditory nerve
    d. Brainstem and brain
  3. How sound travels from the sound source, through the ear, and to the brain.
    a. Sound pushes eardrum
    b. Eardrum pushes three bones
    c. Last bone pushes on oval window
    d. Push on oval window moves fluid in cochlea
    e. Moving fluid in cochlea stimulates the nerves in patterns
    f. Patterns travel up the brainstem to the brain
  4. What can go wrong in each of the four parts of the hearing system and what has gone wrong with child's hearing system.
    a. Outer ear
      (1) Wax plug in canal
      (2) Canal and/or pinna formed incorrectly or missing
    b. Middle ear
      (1) Three bones broken
      (2) Middle ear infection
      (3) Hole (perforation) in eardrum

- c. Inner ear
    - (1) Nerve cells in cochlea damaged or missing
    - (2) Possible damage to balance mechanism as well
- d. Brainstem and brain
    - (1) Auditory nerves in brainstem or auditory portion of the brain damaged or failed to develop
    - (2) Auditory nerve tumors
- e. Area(s) damaged for this child

5. Cause of child's loss, if known

D. Lesson 4 — Measuring Hearing Losses, Preparation for Fitting

1. What an audiogram is, and description of where pitch and loudness are measured on the audiogram, and what the *O* and *X* mean.
    - a. Audiogram is a chart/graph of someone's hearing
    - b. Pitch (frequency, Hz) is across the top of the chart, dB (loudness) is down the side of the chart
    - c. *X* is marked for the left ear and *O* for the right at the dB level where each frequency is heard
2. Explanation of what child's hearing loss looks like (configuration) and amount of hearing loss child has
3. How the audiologist tests for clarity of hearing and tolerance
    - a. Child points to objects or pictures of what he hears
    - b. Audiologist observes child for signs of discomfort at loud levels.

E. Lesson 5 — Parts and Functions of the Aids; Putting on the Aids

Section 1

1. Parts and functions of the aids
    - a. Microphone changes sound into electrical waves
    - b. Amplifier makes the electrical waves bigger
    - c. Receiver changes the bigger electrical waves back into bigger sound waves.
    - d. On-off switch turns aid on and off
    - e. Battery gives the aid power
    - f. Volume control allows for adjustment of loudness
    - g. Tone control allows for adjustment in frequency
    - h. Telephone switch
        - (1) *T* for telephone pickup or FM unit usage
        - (2) *M* for microphone (on) for hearing others and one's own voice
        - (3) *MT* for hearing one's own voice and person wearing FM unit microphone
    - i. Cord on body aid takes the bigger electrical waves from the amplifier to the receiver
    - j. Earmold fits snugly in ear to prevent feedback and to direct bigger sound waves into the ear canal

2. How to correctly put the hearing aids on the child and begin hearing aid usage leading to 100% wearing time
   a. Body aids
      (1) Place harness or vest on child
      (2) Place hearing aid in carrier picket, switches off
      (3) Connect mold to receiver
      (4) Insert canal of earmold into ear canal with top of earmold rotated forward, then lift pinna and screw into proper place
      (5) Move cord out of way (under shirt, etc.)
      (6) Turn switches on, telephone switch on *M*
      (7) Set volume control at correct setting
      (8) Utilize baby cover if available
   b. Behind-the-ear aids
      (1) Connect earmold tubing to neck of aid; line up for correct ear so tubing is straight
      (2) Insert canal of earmold into ear canal with top of earmold rotated forward, then lift pinna and screw in the mold
      (3) Place hearing aid behind the pinna
      (4) Use toupee tape to secure aid to head
      (5) Turn switches on, telephone switch on *M*
      (6) Set volume control to correct setting (mark with fingernail polish if no numbers)
      (7) Use tape over earmold and pinna if needed, or use headband around head over earmolds leaving microphone opening uncovered
3. Four major considerations made when selecting hearing aids
   Section 2
   a. Type of instrument (ear-level, body)
   b. Frequency (pitch) response
   c. Arrangement (one or two aids, Y cord, etc.)
   d. Maximum power output (maximum loudness aid will go to)

F. Lesson 6 — Daily Listening Check
1. How to do daily listening check (see pages 203 to 207)
2. If appropriate, how to use "Establishment of Hearing Aid Use" (see page 209)

G. Lesson 7 — Care of the Hearing Aids, Trouble Shooting for Feedback Source
1. Proper care of hearing aids
   a. Battery
      (1) Correct size
      (2) Material
      (3) Remove when aid is off
      (4) Remove when dead
      (5) Purchase only 2 month supply
      (6) Keep in cool, dry place

        (7) Do not leave on metal surfaces
        (8) Carry extras in original package
        (9) Keep safe from small children
    b. Controls, switches, and microphone
        (1) Avoid food and dirt
        (2) Wear body aids under soft clothing
        (3) Clean aids once a year
        (4) Avoid catching switches on clothing
    c. Cord (body aids only)
        (1) Do not bend, knot or chew
        (2) Channel cord out of child's way
        (3) Disconnect by pulling on plastic end not on cord itself
    d. Receiver (body aids only)
        (1) Do not drop or bang
        (2) Use receiver savers
    e. Earmold and plastic tubing
        (1) Keep clean, check each night
        (2) Check for rough spots
    f. Earhook (neck)
        (1) Keep clean
        (2) Screw on securely.
    g. Body of hearing aid
        (1) Avoid placing in very cold or hot places
        (2) Do not put in water
        (3) Do not drop or bang
2. Trouble shooting for the source of feedback (see page 215)

II. Parents will be able to answer the following questions (when appropriate).
    A. What do you do if the hearing aids and molds keep falling out? (see page 227)
    B. What do you do if your child keeps pulling the hearing aids out of his ears? (see page 227)
    C. Why does your child sometimes respond to sound without his hearing aids on? (see page 227)
    D. Your child has worn the aids several weeks/months and still is not paying attention to sounds. He is still not talking, why? (see page 227)
    E. Why are properly fitting molds so important? What is a good way to make sure new molds are good? (see page 228)
    F. Why is it important to keep the aids at the right loudness setting? How can you remember to do this? (see page 228)
    G. How do you know if the hearing aids are working properly? What can you do as a parent to keep the aids working as best and as long as possible? (see page 228)
    H. How do you give sounds to your child so he can "listen" all during the day? (see page 228)
    I. How do you know if your child has a tolerance problem? What do you do about it? (see page 227)

J. In addition to the Daily Listening Check, what can you do to care for your child's aids? (see page 228)

K. How often should your child's hearing be evaluated? (see page 229)

L. Can your child wear hearing aids when playing outside? (see page 229)

Materials

1. Materials from previous lessons as appropriate.

Lesson

Discussion: Review of lessons 1-7. This lesson needs to be a thorough review of lessons 1-7. Review the following concepts from each lesson.

Lesson 1. The importance of sound. What is sound? How sound travels. The meaning of *frequency, Hertz,* and *dB*.

Lesson 2. How speech sounds are recognized. How speech perception is affected by the speaker, connected speech, and listening environment. The sensitivity required for full hearing of conversational speech. Preferred speech to background noise ratio.

Lesson 3. The otologist's role and need for follow-up. The four parts of the hearing system and what is in each part. How sound travels through the ear to the brain. What can go wrong in the four parts of the hearing system. The problem with the child's hearing system. The cause of the child's hearing loss.

Lesson 4. Explanation of the audiogram. The amount of the child's hearing loss.

Lesson 5. How to determine the best hearing aids for the child. The four different types of hearing aids. The parts and functions of the child's hearing aid. How to put the hearing aid on the child correctly.

Lesson 6. The daily listening check.

Lesson 7. Care of the hearing aid. Trouble shooting for the source of feedback. Obtaining and keeping data on the Hearing Aid Wearing Time form (from the Parent Notebook, Section III, page 105).

Discussion: Hearing aids and the role of the parents. Review with the parents the need their child has for hearing aids and the fact that they need to be worn all waking hours, not just a part of the day. Some children, when they become older, even ask to wear their aids while they are sleeping, stating the aids make them a part of the world at night.

Some parents experience difficulty accepting the aids and some experience trouble keeping aids on their child. Utilize the following questions and possible answers (received from Marion Downs) to facilitate an open discussion about these issues faced by the parents. This information can be utilized again in later lessons any time the parents have specific questions.

QUESTION: THE BODY AID RECEIVER AND EARMOLD WON'T STAY IN THE EAR

ANSWER: Babies have very small, soft ears. The ear may be so soft that the earmold and receiver easily fall out. The audiologist may put a short tube from the receiver to the earmold. The receiver can then be put just behind the pinna. The tube can be made strong with wire so it will hold its shape to the ear. Or the audiologist may put the receiver on the shoulder with a tube up to the mold.

After a year or 18 months, the ear should be large enough to hold both the receiver and the earmold. If they still keep falling out, ask to have another earmold made. Maybe a softer mold would be better.

Sometimes the cord keeps getting in the way of small hands, and the receiver is accidentally pulled out. Try placing the aid on the back instead of the front. Hold the cord down to the back of the shirt collar with a safety pin. The safety pin goes around the cord, not through it.

If the earmold still keeps coming out, you may have to make a knitted band for him to wear.

QUESTION: MY CHILD CONTINUALLY PULLS THE AIDS OUT OF HIS EARS, SO THE EARMOLDS MUST BE HURTING HIM, OR THE AIDS MUST BOTHER HIM, OR PERHAPS HE DOESN'T NEED AIDS AND THEY DON'T DO HIM ANY GOOD.

ANSWER: If you are (and act) completely accepting of the aids, you probably need to be more firm with your child. But just to be sure, check the aids and earmolds carefully.

1. If there is some real soreness from the earmold that is hurting him, there is a way to find out: (a) make an appointment with your doctor, (b) put the earmold in the child's ear for an hour before you see the doctor who will look at the child's ear for soreness. If there is soreness, the mold can be remade with a special material or made smooth if there is a rough spot.

2. If the aid is bothering the child, the audiologist can tell by doing tests with the aid turned up very loud (tolerance testing, see page 188). If loud sounds make the child blink or cry, then the audiologist will turn the hearing aid down.

3. If you feel that the child doesn't really need the aid, you should ask the audiologist to make another test. He will show you what sounds the child hears and what sounds he doesn't. After a child has worn an aid for a while and has learned to hear sounds around him, he may respond to some sounds even when he is not wearing the aid. He is responding to "little cues." That means he knows sounds are important so he is listening to them. He may be hearing only a part of a sound, very softly, but he now pays attention to it. This does not mean that his hearing has improved or has become normal, much as we would like that to happen. But it is very exciting to know that he is making use of every bit of his hearing.

You should begin to work toward training him never to touch the hearing aid or to take it off.

QUESTION: HE'S WORN THE AID SEVERAL MONTHS, AND HE ISN'T TALKING YET, SO IT'S NOT DOING HIM ANY GOOD. I DON'T SEE WHY HE SHOULD WEAR IT.

ANSWER: How long does a newborn baby have to hear sounds before he is even able to pay attention to them?—6 to 9 months. How long before he begins to talk?—One to one and a half years. A child who has just begun to wear a hearing aid needs the same time as the newborn baby—his "listening age" starts from the time the hearing aid was put on. He must go through the same time of learning to listen, and learning to use sound himself.

QUESTION: HE DOESN'T SEEM TO BE GETTING MUCH FROM HIS HEARING AID LATELY: HE'S NOT ATTENTIVE ANYMORE AND HE ISN'T MAKING ANY MORE PROGRESS.

ANSWER: Check the volume setting on the aid. Is it being worn at the right setting? Are you turning it down because of feedback? If so, the earmold may not fit anymore. At least half of the problems with hearing aids are because the molds are too small and sound leaks out from around the mold. You then hear feedback. You should have a new earmold made if you hear feedback.

A good rule to follow when you get a new earmold is to turn the hearing aid up as loud as it will go. Put the mold in the ear. If there is any feedback at this setting, don't accept the mold—ask for another one to be made.

You should be prepared to buy new earmolds often. A baby may need new molds every 2 to 3 months; from 2 years to 6 years of age it may be every 6 months to a year; and from 6 to 12 years, it will be at least every year or 2.

Make sure the aids are working properly. Do your Daily Listening Check each day.

COMPLAINT: SOMETHING ALWAYS SEEMS TO BE GOING WRONG WITH THE AIDS. I GET SO TIRED OF TAKING THEM BACK TO THE DEALER.

ANSWER: (1) Remember, a hearing aid is a very small machine with thousands of small parts in it. Many things can go wrong with it. Remember, it is being used many hours each day. Most machines need repair fairly often if they are used all of the time. (2) Make sure you are doing everything you can to take care of the aid and to make sure it is working properly (see Home Hearing Aid Lesson 6, "Daily Listening Check." (3) Back up the daily listening check by equally routine, but less frequent, electroacoustic tests. Approximately every 3 to 6 months the aid should be checked by the audiologist for gain (loudness), saturation sound pressure level (maximum loudness), frequency response (pitch), and distortion (noise). If a problem is detected, have it repaired immediately (usually the audiologist [hearing aid dealer] will mail the aid to the factory). Remember to obtain a loaner aid.

QUESTION: MY BABY DOESN'T SEEM TO LISTEN VERY WELL EVEN THOUGH HE NOW HAS HEARING AIDS.

ANSWER: An infant needs to be given sounds to listen to all of his waking hours. He should be talked to, sung to, and called to until he is put to bed. You must not expect him to talk immediately. (Review what was said about listening age above). The normal child spends a full year in listening before he learns to speak.

Also consider the level of background sound in your infant's environment. It must be quiet some of the time so that he can learn to attend to the sounds you are trying to make meaningful to him.

QUESTION: HOW OFTEN DO WE NEED TO HAVE OUR CHILD'S HEARING EVALUATED?

ANSWER: Hearing testing (thresholds for different pitched tones and middle ear check—tympanometry) should be scheduled every three months for young infants; every six months for pre-schoolers and school age children up to age 8 or 9; and once a year, every year, for older children. You can watch for any signs of a change in hearing status such as: feedback because your child is turning up the volume control or deterioration of your child's responsiveness to sound.

QUESTION: CAN MY CHILD WEAR HIS HEARING AIDS WHEN HE PLAYS OUTSIDE?

ANSWER: Generally it is best to wear the hearing aids full-time. However, some contact sports are best played without the aids. Toupee tape or a soft cap or head band could be utilized during active play to protect the aids from loss and/or damage. Evaluate each situation carefully and let your child help decide whether or not they should be worn.

Teaching strategies.

1. In general, every parent can benefit from the review of Lessons 1-7. Note areas parents have trouble remembering and determine what information is really essential for them to function effectively.

2. Use the revised Role of Parents (Downs) as (a) a means of discussing possible future problems, (b) a way to bring up material not previously covered, (c) a review, if all these topics have been discussed previously, or (d) hold material until topics are brought up by parents.

Review Questions For Parents (for revised Downs' section only)

1. What do you do if the receivers and molds keep falling out?
(utilize short tube over the pinna, utilize tubing from mold down to receiver placed on the shoulder, utilize mold made from softer material, keep cord out of child's way, utilize soft headband)

2. What do you do if your child keeps pulling the aids out of his ears?
(check for soreness in ear canal, test for tolerance problem, have hearing re-evaluated)

3. Why after several months of hearing aid usage, is your child not paying attention to sound or talking?
(listening time starts with hearing aid usage, child needs 6-9 months to pay attention, one and one-half years to talk)

4. Why are properly fitting molds so important? What is a good way to make sure new molds are good?
(good fitting molds allow maximum use of the hearing aids, check for feedback with new molds by turning on volume full)

5. How do you know if the aid is working properly? What can you do to keep the aid working best and as long as possible?
(remember parts and functions of the aids, do daily listening check, have audiologist check the aids every 3-6 months)

6. Why might an infant who has hearing aids not listen well?
(listening needs to be during all waking hours for about a year, background sounds must be kept low enough so that child can learn to attend to meaningful sounds)

7. How often does a child need to have a hearing evaluation?
(infants every 3 months; pre-schoolers and school age up to age 8 or 9, every 6 months; older children every year and/or any time you suspect a change in hearing ability)

8. Can a child wear hearing aids outside?
(generally best to wear aid all the time except for contact sports, use protective headband, toupee tape or cap to protect from loss or damage)

Reference and Reading List

Downs, M. P. (1971). Maintaining children's hearing aids: The role of parents. *Maico Audiological Library Series, 10,* 1.

Lesson 9

"Sound Approach"; "Changing Sounds"; Competency Test

Outline/Parent Objectives

I. Parents' awareness and understanding of concepts presented in Lessons 1-8 will be enhanced by viewing the slide and tape presentations, " Sound Approach" and "Changing Sounds"

II. Parents will obtain a score of 80% or better on the Competency Test (5 parts, 20% each, Total=100%)

   A. Parents will point out the parts of their child's hearing aid and describe the function of each part

      1. Microphone changes sound into electrical waves
      2. Amplifier makes the electrical waves bigger
      3. Receiver changes the bigger electrical waves back into bigger sound waves
      4. On-off switch turns aid on and off
      5. Battery gives the aid power
      6. Volume control allows for adjustment of loudness
      7. Tone control allows for adjustment in frequency
      8. Telephone switch
         a. T for telephone pickup or FM unit usage
         b. M for microphone ("on") for hearing others and one's own voice
         c. MT for hearing one's own voice and person wearing FM unit microphone
      9. Cord on body aid takes bigger electrical waves from the amplifier to the receiver
      10. Earmold fits snugly in ear to prevent feedback and to direct bigger sound waves into the ear canal

   B. Parents will be able to fit the hearing aids on their child

      1. Body aids
         a. Place harness or vest on child
         b. Place hearing aid in carrier pocket, switches off
         c. Connect mold to receiver
         d. Insert canal of earmold into ear canal with top of earmold rotated forward, then lift pinna and screw into proper place
         e. Move cord out of way (under shirt etc.)
         f. Turn switches on, telephone switch on M
         g. Set volume control at correct setting
         h. Utilize baby cover, if available

2. Behind-the-ear aids
   a. Connect earmold tubing to neck of aid, line up for correct ear so tubing is straight
   b. Insert canal of earmold into ear canal with top of earmold rotated forward, then lift pinna and screw in the mold
   c. Place hearing aid behind the pinna
   d. Use toupee tape to secure aid to head
   e. Turn switches on, telephone switch to M
   f. Set volume control to correct setting
   g. Use tape over earmold and pinna if needed, or use headband over earmolds leaving microphone opening uncovered

C. Parents will be able to describe how to care for:
   1. Battery
      a. Correct size
      b. Material
      c. Remove when aid is off
      d. Remove when dead
      e. Purchase only 2 month supply
      f. Keep in cool, dry place
      g. Do not leave on metal surfaces
      h. Carry extras in original package
      i. Keep safe from small children
   2. Controls, switches, and microphone
      a. Avoid food and dirt
      b. Wear body aids under soft clothing
      c. Clean aids once a year
      d. Avoid catching switches on clothing
   3. Cord (body aids only)
      a. Do not bend or knot or chew
      b. Channel cord out of child's way
      c. Disconnect by pulling on plastic end not on cord itself
   4. Receiver (body aids only)
      a. Do not drop or bang
      b. Use receiver savers
   5. Earmold and plastic tubing
      a. Keep clean, check each night
      b. Check for rough spots
   6. Earhook ("neck")
      a. Keep clean
      b. Screw on securely

      7. Body of hearing aid
         a. Avoid placing in very cold or hot places
         b. Do not put in water
         c. Do not drop or bang
   D. Parents will demonstrate a daily listening check utilizing one of their child's aids and the Daily Listening Check parent handout as a guide.
   E. Parents will demonstrate trouble-shooting the hearing aid for the source of feedback utilizing one of their child's aids and the parent handout as a guide.

III. Parents will enhance their child's maximum use of residual hearing sensitivity by providing:
   A. Earmolds that prevent feedback
   B. Properly fitted hearing aids

Child Objectives

1. Child will demonstrate acceptance of the hearing aids by wearing them 100% of waking hours or wearing them time recommended by the audiologist.

Materials

1. Slide and tape presentations "Sound Approach" (if not already presented in the Communication Program) and "Changing Sounds"
2. Slide projector and tape recorder
3. Competency test
4. Parent handouts "Daily Listening Check" and "Trouble Shooting for the Source of Feedback"
5. One of the child's aids

Lesson

Slide/tape presentations. Use the slide/tape presentations "Sound Approach" and "Changing Sounds" to enhance the parents' understanding of all the concepts presented in Lessons 1-8. Discuss the presentations. Remind parents that they (or the program) must be willing to consistently provide well-fitting earmolds. Help the parents determine where the best fitting molds can be obtained (audiologist, hearing aid dealer, etc.) in the least amount of time.

Also remind parents of the importance of selecting aids that improve the child's hearing sensitivity as close to 30 dB HL as possible which is required for full audibility of speech (see Lesson 2, pages 167-169). Determining the best amplification that will provide this improvement in hearing sensitivity may take longer than the actual Hearing Aid Program Lessons and can extend into the Auditory Program.

Competency test. Conduct the competency test activity. Ask the parents to perform skills A-E in the outline on pages 231 to 233. Make sure the basic skills are performed but be accepting of varying levels of parent expertise and knowledge.

Use the Competency Test as a guide for going on to the Auditory Program. If the parents cannot demonstrate 80% competency, they may not be ready to go on. The child should be wearing the hearing aids 100% of his waking hours (unless contraindicated for medical or audiological reasons). Generally, it is best *not* to go on to the Auditory Program until this has been accomplished. If 100% wearing time has not been accomplished, determine the reason(s) and work directly on this goal before going on to other programming.

Review Questions For Parents

None

Sample Challenges

None

APPENDIX

Consumer Information;
Radio Frequency-Modulated Systems;
A Guide to Special Earmolds and Tubing

Notes/Supplemental Information

1. Use the Consumer Information with the parents at the time of purchase of aids. Go over the information with the parents and leave a copy with them for future reference (if appropriate).

2. The FM (radio-frequency modulated systems) information is for the parent advisor. If a family will be trying an FM unit, read the information carefully as well as the manual accompanying the unit. Help the parents check the unit each day before usage and learn when to turn off their microphones. (See Auditory Program, page 439 for more information.)

3. The Guide to Special Earmolds and Tubing should be utilized as an addendum to the SKI*HI Monograph, "Earmolds For Young Hearing Impaired Children" which is available from the SKI*HI Institute.

Warranty/Guarantee

The hearing aid company gives you a guarantee when you buy the new hearing aids. You enter the date you paid for or received the aids on the warranty card and the guarantee ends one year from this date.

If something goes wrong with an aid during this one year period, the company will repair it free. The company will *not* guarantee the aid if you try to fix it yourself; have another company fix it; if the cord, earmold, plastic tubing or battery causes the problem; or the aid is broken because of an accident (or because you didn't take care of it).

The other two pieces of information you must fill out on the guarantee card are: (parent advisor's point these out to the parent)

Model/Number: the letters and numbers on the hearing aid case which identify the characteristics of the aid, and the

Serial number: the unique numbers (only your aid) printed on the hearing aid case that helps you describe the aid if it is lost or stolen.

Service Plan

You can purchase a Service Plan from the manufacturer when you purchase the aid. It gives you extra protection for problems that the guarantee does not cover. For example, the aid will be repaired or replaced free if it is lost, stolen, damaged in a fire, car accident, or dropped into water, etc. The service plan can be purchased only when your aid is new, and lasts usually 1 to 3 years. The cost of service plans varies with the company. READ YOUR SERVICE PLAN CAREFULLY.

Insurance

Check with your householders' policy to learn if your particular company covers hearing aids. If they do not and you want coverage for theft, fire, accidental breakage, water, auto accident, etc; Fireman's Fund Insurance Co. (and probably others as well) offer Hearing Aid Insurance for approximately $15 per year. To obtain this coverage, check with your local insurance dealer. Remember, read your policy carefully.

RADIO-FREQUENCY-MODULATED SYSTEMS

The frequency-modulated (FM) system includes a microphone worn by the parent (or placed near the source of sound), normally clipped to a collar or lapel ensuring a favorable microphone-talker distance (six inches) for a good signal to noise ratio. The microphone connects via a wire to the transmitter (about the size of a package of cigarettes) which can be clipped to the parent's waistband or belt. The child wears the personal receiver (same size as transmitter) clipped to his waist or to a harness with either a neck-loop transducer beneath his shirt or direct connector wires to each hearing aid. Some models also have an extension cord to connect directly into tape recorders, radios or television sets which have an audio output jack.

Make sure the hearing aids are operating properly and that the hearing aids are equipped with an *MT* switch so that the child can hear himself (via *M*) and the FM signal (via *T*) at the same time. It is important to check with the audiologist to make sure the child's personal aids have equivalent power at the *MT* setting—many older aids lose so much power when switched to the telephone settings that a child with profound hearing loss may not have enough gain. If the hearing aids do have weak tel-coil amplifiers, the volume setting on the child's personal receiver can be turned full on and/or the hearing aids can be turned to a higher gain setting. If the desired loudness cannot be obtained, the neck-loop should not be utilized. In this case, direct wire connecters or aids with a more powerful tel-coil could be tried.

Some FM systems have tone control adjustments; therefore, as the parent advisor, you need to help the parents understand the settings selected by the audiologist, as well as how to care for the instrument.

Be sure to obtain the operating instructions manual (or copy it) so that you can be well informed on the settings as well as care of the rechargable batteries.

Be sure the parents understand how to check to see if the unit is working before fitting it on their child. If it sounds bad to them and the batteries are new, it probably needs repairs. When working properly the quality of the sound transmitted is excellent. Remind the parents that the child will receive *everything* they say and discuss appropriate times for turning off their microphone (e.g., while answering a phone call in another room or while utilizing a noisy kitchen appliance without the child's awareness).

The FM system can be used individually or with groups. It can be utilized anywhere as no permanent home or classroom installation of any kind is required. All that is required is that the child's receiver be tuned to the parent's transmitter and that thoughtful utilization be maintained. Remember the child hears the parent's voice the loudest regardless of closer voices. If a child is vocalizing or attempting verbal communication to someone else, it is important that the parent's FM transmitted voice does not obliterate the child's attempts. If this occurs repeatedly, the effect may be to de-emphasize the auditory signal, as the child finds it irrelevant and distracting. Help the parents learn to use the unit effectively.

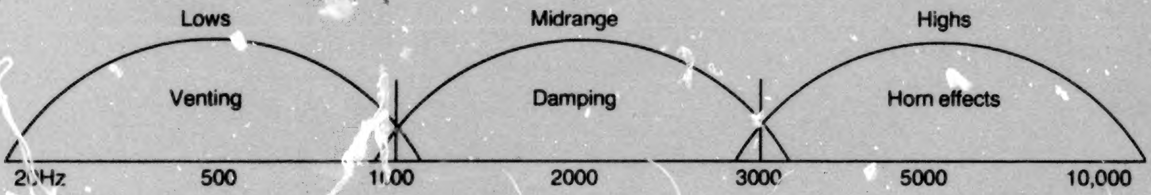
The parents need also to be aware of the excellent results obtained from utilizing FM units in the mainstream setting. The use of the wireless FM microphone in a regular school setting results in a highly significant increase in intelligibility scores.

Manufacturers are increasingly responsive to consumer needs and many different brands have some unique and desirable features. Contact the child's audiologist for the latest information.

A GUIDE TO SPECIAL EARMOLDS AND TUBING

The following information is basically for the Parent Advisor; it is a supplement to the SKI*HI Monograph "Earmolds For Young Hearing Impaired Children."

The earmold and tubing have to be considered part of the total response obtainable from wearable amplification. Just as modern hearing aids can be adjusted to control the total frequency response and maximum output and thus enhance residual hearing, the selection of the earmold and tubing allows for systematic selection of response parameters. The earmold/tubing selection influences three general frequency areas:



Venting effects will be determined by vent diameter, location and length. They can be parallel (to the tube) or diagonal (may be required due to physical size). Vents may range in size from a small vent (.020"), to a medium vent (acoustic modifier .040 to .100") to open coupling or large vent (.100"+). Proper venting can be used as an effective method for modifying (reducing) the low frequencies without reducing the high frequencies.

Damping will help to eliminate the sharp peaks in the frequency response, providing a smoother mid-frequency response out to 8 kHz. Dampers (filters) are usually placed at the tip of the earhook (where it attaches to the tubing) and/or where the tubing inserts into the mold. Filters, depending on the type of material, can also reduce output.

Horn coupling refers to the diameter of the tubing which is tapered at the earhook end and is gradually larger out to the tip of the earmold canal. The tube diameter, the length of the earmold canal, the use of dampers (filters), and the type of mold utilized (occluded or open molds) affect the response obtained. The Libby horn was designed to provide a smooth response *extended* in the high frequencies beyond what is usually obtainable.

Unit 5

HOME COMMUNICATION PROGRAM

Introduction

Rationale/Goals

A child's communication begins developing from birth through natural interactions and conversations between the child and his parents. Through these interactions, the child learns about the world and things that are important to him and how to communicate about them.

Effective interaction between the parent and the young hearing impaired child is of utmost importance if language is to develop. The child is not just a language learner, but rather a dynamic partner in a two-way communication system. The child has communication intentions to be expressed through a variety of gestures, facial expressions, and vocalizations, and for a variety of purposes. If parents are sensitive to these expressed messages and respond to them effectively, the child will develop a growing communication system. If the child does not develop a communication system, he will not develop normal language.

The goals of the Home Communication Program are:

1. Parents will understand how communication develops and its importance for language development.
2. Parents will develop the essential skills to foster and stimulate effective parent-child communication.
3. Parents will monitor and evaluate their child's communication behaviors
4. Parents will arrive at a communication methodology decision appropriate for the child and the entire family.

Overview of Program

Assessment

Information Lessons:

I. Importance of Communicative Interaction
II. How an Infant Learns to Communicate
III. Signals Important for Communication
IV. Infant Communication: Why a Child Communicates
V. Infant Communication: How a Child Communicates
VI. Introduction to Aural-Oralism and Total Communication

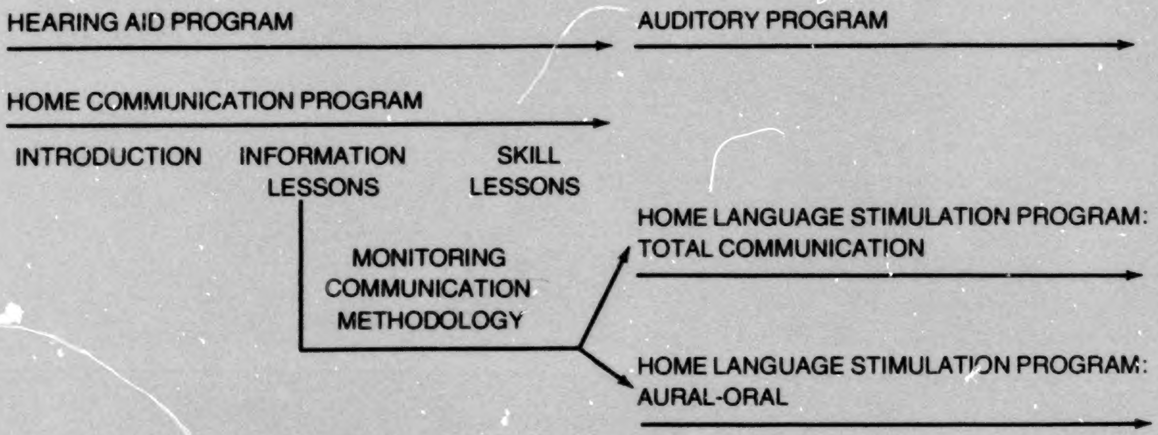
VII. Evaluation for Aural-Oralism or Total Communication-1
VIII. Evaluation for Aural-Oralism or Total Communication-2
IX. Parent Communication: Motherese
X. Parent Communication: Interaction and Conversation
XI. Parent Communication: Reinforcement
XII. Communication Through Experience Pictures

Skill Lessons:

A. Establishing an Effective Communicative Setting
    1. Minimize Background Noise
    2. Encourage Child to Explore and Play
    3. Serve as Communication Consultant
    4. Use Interactive Turn-Taking
    5. Get Down on Child's Level
    6. Maintain Eye Contact and Direct Conversation to Child
B. Establishing Effective Non-Verbal Communication
    7. Use Facial Expressions
    8. Use Intonation
    9. Use Natural Gestures
    10. Touch Child
C. Establishing Effective Verbal Communication
    11. Respond to Child's Cry
    12. Stimulate Babbling
    13. Identify and Respond to Communicative Intents
    14. Use Conversational Turn-Taking
    15. Use Meaningful Conversation

Use of the Communication Program in the SKI*HI Model

The Communication Program fits into the SKI*HI Model as illustrated below:


HEARING AID PROGRAM
AUDITORY PROGRAM
HOME COMMUNICATION PROGRAM
INTRODUCTION
INFORMATION LESSONS
SKILL LESSONS
MONITORING COMMUNICATION METHODOLOGY
HOME LANGUAGE STIMULATION PROGRAM: TOTAL COMMUNICATION
HOME LANGUAGE STIMULATION PROGRAM: AURAL-ORAL

General Teaching Suggestions

Introduction. The teaching suggestions for the Home Communication Program are to be considered a supplement to the home visit procedures section of the manual (see pages 67–69). It is assumed the parent advisor is comfortable with the teaching skills and procedures of the SKI*HI Model before considering any of these suggestions.

A basic principle of the Home Communication Program is to develop effective interaction between parent and child since children learn better when they are involved and actively participating. The same principle applies to adults, although adults expect somewhat more didactic teaching situations. Keep adult teaching strategies in mind and make use of them for more effective home visits. Since parent advisors are assisting parents to teach their child, take advantage of parents' knowledge of and experience with their child. Encourage parents to share their expertise in order to better relate the lessons and skills to the family's individual needs and concerns.

Information Lessons. These are information lessons, not skills. They provide a foundation to enhance parents' understanding of natural communication development. There are no skills to learn and no challenges are required, although some challenges are suggested at the end of a few lessons. The parent advisor may choose to devise some appropriate challenges. The parent advisor should be familiar with the content of each lesson and present it in a manner understandable to each individual family. It is best if the lesson is not read. The *Outline/Parent Objectives* and/or communication flip chart can be used as reminders of the main concepts of the lesson.

If the communication lessons are being conducted with parents of toddlers and preschoolers, the parent advisor should refer to the young child instead of the infant. Rather than examples of infant activities, the parent advisor may want to substitute examples of toddler activities. In addition, the parent advisor may want to skip references to the early development of the newborn such as "The Infant's Ability to Learn and Communicate" in Information Lesson II and "Vision" and "Hearing" in Information Lesson III.

Information Lesson XII—*Communication Through Experience Pictures* is placed last only because it does not fit into the sequence of the previous lessons. Depending on individual family needs, it could be presented anywhere in the Communication Program. Parent advisors are encouraged to present it as soon as they feel the child and his parents might benefit from it.

The following suggestions may be useful in presenting Information Lessons:

1. Refer to "Review Questions For Parents" during the lesson to encourage parent participation and maintain interest.
2. Use the hearing impaired child or sibling present for examples of lesson concepts. Children tend to communicate often to get parents' attention during home visits.
3. Ask parents to share personal experiences to illustrate the concepts of objectives.
4. Clarify or illustrate the lesson with your own personal experiences.
5. Leave copies of the lessons or objectives with the parents to review and discuss during the week.
6. Compile your own list of discussion questions to insert appropriately.

7. Challenge parents to observe examples of the lesson concepts during the week and discuss at the next home visit (for example, instances of turn-taking or signals of communication).

8. When appropriate, ask parents to use flip chart or outline to review lesson.

9. When appropriate, shorten lesson to essential information by using Outline/Parent Objectives and adding examples of child behaviors to illustrate.

10. Consult Reference and Reading List at the end of each informational lesson for supplemental readings.

Skill Lessons. These lessons teach specific communication skills that the parents will be able to incorporate into their daily interactions with their child. The specific skills are stated in the *Outline/Parent Objectives*. As in the Information Lessons, the discussions are not to be read and the skills should be explained and presented in a manner understandable to each individual family. The SKI*HI Model of home teaching should be followed for the fifteen skills lessons.

The following suggestions may be useful in presenting the Skill Lessons:

1. Many parents may already be using some of the skills effectively. If so, review the skill briefly so parents recognize its value and reinforce them for already stimulating their child appropriately.

2. In modeling a skill and choosing a challenge, the parent advisor should look for natural activities that are likely to include frequent use of the skill being taught. For example, washing dishes side-by-side at the sink includes turn-taking, natural gestures and communication intents, but not a lot of eye contact. Refer to additional activities included in the teaching strategies of the Skill Lessons.

3. Involve the parent in choosing challenges to model and practice. Challenges that meet the parents' needs best demonstrate the usefulness of skills and will be performed often. Parents will also feel they are maintaining control over decisions. This is good since professionals sometimes tend to assume too much responsibility for decision making.

4. Be a constant observer of how, why, and what a child communicates to appropriately match the skill activities and challenges to the child's level.

5. For supplemental reading materials, consult the Reference and Reading List for all skill lessons on pages 382–383.

Sequence of Lessons

Before beginning the Communication Lessons, discuss with the parents the rationale and goals of the program and briefly overview the Assessment, Information Lessons, Skill Lessons, and Evaluation and Monitoring for the Communication Methodology decision. It also may be helpful to leave a copy of the overview with the parents for future reference.

Many of the Skill Lessons are based on the content of the Information Lessons and it is suggested that the lessons be presented in the order listed in the Overview. However, flexibility is necessary and is encouraged since the parent advisor may need to use her own judgment as to how much information a family needs and when they need it.

Try to be familiar with the entire program before presenting. The lessons are written to provide maximum information, strategies, and challenges. However, not all families will need every activity and challenge, so moderate them according to parents' competencies and needs.

As the Communication Program is begun, also consider how to integrate the final Hearing Aid Lessons and the beginning Auditory Lessons. They can be presented in alternate home visits, paired at a single home visit, or in other ways that seem appropriate. The following alternate sequencing suggestions will help you in planning:

Alternative Sequence for Communication Lessons — 1

This suggested sequence offers the opportunity to appropriately alternate Information Lessons and Skill Lessons at each home visit. They then may be paired with an Auditory or Hearing Aid Lesson.

Skill Lesson 1 - Minimize Background Noise
Information Lesson I - Importance of Communicative Interaction
Information Lesson II - How an Infant Learns to Communicate
Skill Lesson 2 - Encourage Child to Explore and Play
Skill Lesson 3 - Serve as a Communication Consultant
Skill Lesson 4 - Use Turn-Taking
Skill Lesson 5 - Get on Child's Level
Skill Lesson 6 - Maintain Eye Contact and Direct Conversation to Child
Information Lesson VI - Introduction to Aural-Oralism and Total Communication
Information Lesson VII - Evaluation for Aural-Oralism or Total Communication-1
Information Lesson VIII - Evaluation for Aural-Oralism or Total Communication-2
Information Lesson III - Signals Important for Communication
Skill Lesson 7 - Use Facial Expressions
Skill Lesson 8 - Use Intonation
Skill Lesson 9 - Use Natural Gestures
Skill Lesson 10 - Touch Child
Skill Lesson 11 - Respond to Child's Cry
Information Lesson IV - Infant Communication: Why a Child Communicates
Information Lesson V - Infant Communication: How a Child Communicates
Skill Lesson 12 - Stimulate Babbling
Information Lesson IX - Parent Communication: Motherese
Information Lesson X - Parent Communication: Interaction and Conversation
Information Lesson XI - Parent Communication: Reinforcement

Skill Lesson 13 - Identify and Respond to Communicative Intents
Skill Lesson 14 - Conversational Turn-Taking
Skill Lesson 15 - Meaningful Conversations
Information Lesson XII - Communication Through Experience Pictures

Alternate Sequence For Communication Lessons — 2

This suggested alternate sequence might be used for:

1. Families who are more skilled and who do not need full emphasis on each lesson.
2. Families who may be in the program for a limited time.
3. Families for whom shortening time and simplifying content may be more appropriate.

Many of the lessons are grouped and are taught in the following sequence:

Information Lesson I - Importance of Communicative Interaction
Skill Lesson 1 - Minimize Background Noise

Information Lesson II - How an Infant Learns to Communicate

Skill Lesson 2 - Encourage Child to Explore and Play
Skill Lesson 3 - Serve as a Communication Consultant

Skill Lesson 4 - Use Turn-Taking

Skill Lesson 5 - Get on Child's Level
Skill Lesson 6 - Maintain Eye Contact and Direct Conversation to Child

Information Lesson VI - Introduction to Aural-Oralism and Total Communication

Information Lesson VII - Evaluation for Aural-Oralism or Total Communication-1

Information Lesson VIII - Evaluation for Aural-Oralism or Total Communication-2

Information Lesson III - Signals Important for Communication
Skill Lesson 7 - Use Facial Expressions
Skill Lesson 8 - Use Intonation
Skill Lesson 9 - Use Natural Gestures
Skill Lesson 10 - Touch Child

Information Lesson IV - Infant Communication: Why a Child Communicates
Skill Lesson 11 - Respond to Child's Cry

Information Lesson V - Infant Communication: How a Child Communicates
Skill Lesson 12 - Stimulate Babbling

Information Lesson IX - Parent Communication: Motherese

Information Lesson X - Parent Communication: Interaction and Conversation

Information Lesson XI - Parent Communication: Reinforcement

Skill Lesson 13 - Identify and Respond to Communicative Intents

Skill Lesson 14 - Conversational Turn-Taking

Skill Lesson 15 - Meaningful Conversations

Information Lesson XII - Communication Through Experience Pictures

There are two excellent SKI*HI resources available that can be used as a supplement to the SKI*HI Manual to accommodate special family needs: *Developing Cognition in Young Hearing Impaired Children* and *Low-Verbal Adaptation of the SKI*HI Model.*

Developing Cognition in Young Hearing Impaired Children: For families able and eager to handle additional information on cognition as it relates to communication, the six lessons in this monograph can be alternated with the Communication Lessons. The introduction contains suggestions as to how the Cognition Program can fit into the SKI*HI Model. Its appendix is a valuable resource for goal directed activities, symbolic play activities, home activities, reading lists and assessments.

*Low-Verbal Adaptation of the SKI*HI Model:* For families which require special modifications of the SKI*HI Communication Program, this program can be very beneficial.

Assessment of Parent-Child Interaction

As an on-going component of the Communication Program, informal assessment forms have been included to help the parent advisor determine how the parents' communication affects the child and how the child's communication affects the parent. Four forms, A, B, C, D, assist the parent advisor in answering the following questions:

1. Does the parent basically communicate verbally or non-verbally? (Form A)
2. Does the child basically communicate vocally or non-vocally? (Form B)
3. Do parents and child respond to each other? (Forms A and B)
4. Does the parent use effective non-verbal communication skills? (Form C)
5. Does the parent use effective verbal communication skills? (Form D)

These forms can be used in several different ways depending on the style and discretion of the parent advisor:

1. Pre-Post Assessment
2. Informal Guide
3. Observation Recorded After the Home Visit
4. Teaching Tool

1. **Pre-Post Assessment:** A pre-assessment of parent-child interaction is made during the first few visits to the home. The first assessment involves the use of two simple interaction analysis forms. See pages 257 and 259 for forms A and B.

Use of Interaction Forms. Forms A and B are to be used this way: The parent advisor should set up a 5-minute natural activity such as feeding, changing, playing, dressing and observe (a) the child's responses to the parent's communication (Form A) and in another activity (b) the parent's responses to the child's communication (Form B).

Form A. Using Form A, the parent advisor should note each time the parent directs communication to the child. The parent advisor checks the communication as being verbal or non-verbal. *Verbal* communication refers to the use of words, phrases, and sentences. *Non-verbal* communication refers to gestures, facial expressions, smiling, babbling, cooing or grunting. When the parent pauses to allow the child a turn to respond, that signifies the end of the parent's utterance. The parent advisor also checks the child's response to the parent's utterance by noting if the child (a) did not respond; (b) responded vocally, could include gestures or facial expressions; and (c) responded non-vocally only. If the child responds vocally but a prompt is necessary, such as mother covering her mouth and then the child's mouth, mother asking the child to say something, or mother pointing to her voicebox, check the column that indicates a child vocalization but put a *p* by the ✓. A child vocalization requiring a prompt would therefore look like this /✓*p*/.

Example of Form A.

Form A					
	Parent Communication		**Child Communication**		
Utterance No.	**Verbal** (can include non-verbal components)	**Non-Verbal** (only)	**No Response**	**Vocal** (can include gestures and facial expressions)	**Non-Vocal** (only)
1.	✓			✓	
2.		✓	✓		
3.	✓			✓ P	
4.	✓		✓		
5.	✓		✓		
6.	✓			✓ P	
7.	✓			✓ P	
8.	✓		✓		
9.	✓		✓		
10	✓		✓		
Percent of total response	90%	10%	60%	40%	0%

For parents who sign, check all signed responses under verbal but note it by using /✓s/. All non-signed communication input such as facial expressions and gestures should be checked as non-verbal. The same would apply for the child who responds in sign. Check under vocal but note /✓s/.

If the parent is communicating so rapidly that it is not possible to check all of the adjoining utterances and the child's responses to those utterances, simply check as many sample utterances and responses as you can during the activity.

Form B. Using Form B, the parent advisor notes how the parent responds to the child's communication. The instructions are the same as for Form A except the parent advisor watches for and notes utterances made by the child followed by parent responses to the child's utterances.

Example of Form B.

Form B

	Child Communication		Parent Communication		
Utterance No.	**Vocal** (can include gestures and facial expressions)	**Non-Vocal** (gestures, facial expressions only)	**No Response**	**Verbal** (can include gestures and facial expressions)	**Non-Verbal** (gestures, facial expressions only)
1.		✓	✓		
2.		✓	✓		
3.	✓			✓	
4.	✓			✓	
5.		✓	✓		
6.	✓			✓	
7.		✓		✓	
8.	✓			✓	
9.	✓			✓	
10.		✓	✓		
Percent of total response	50%	50%	40%	60%	0%

Interpreting results of sample forms A and B. The charting on Form A indicates that mother's communication to the child is primarily verbal. The child responds only 40% of the time to the mother. When the child does respond vocally, prompts are needed. The questions that may arise are "Why does the child respond only 40% of the time?" and "Why are prompts needed?" Mother's verbal and non-verbal input may not be effective. Perhaps the mother does not look at the child or does not use interesting intonation. In order to determine this, the parent advisor will next use checklists C and D. These checklists indicate what specific verbal and non-verbal skills the parents are using.

Form B indicates that the parent rarely responds to the child's non-vocal clues even though half of the child's communication is non-vocal. This lack of responsiveness may significantly affect the child's communication development. When mother does respond, it is usually to the child's vocalizations and her responses are verbal. Again the parent advisor needs to go to checklists C and D to determine specific verbal and non-verbal elements of the parent's responses.

Forms C and D. These forms help the parent advisor determine what non-verbal and verbal skills the parents are using. For example, the parent advisor notes if the parent is using interesting intonation, gestures, and facial expressions (Form C), or if the parent is imitating and expanding the child's babbling (Form D). Checklists C and D are on pages 261, 263, and 265. For checklist C, the parent advisor should set up a short, natural activity for the parent and child to engage in, such as getting a drink of water, or discussing the family photo album. The parent advisor first observes each of the parent's communicative utterances and checks what non-verbal communication she is using such as gestures, facial expressions, and interesting intonation. If the mother is communicating so rapidly that it is not possible to check all of her utterances, simply check the non-verbal components of as many sample utterances as possible. The parent advisor can determine what percentage of the mother's utterances have specific non-verbal components.

Example of Form C.

Form C							
Parent Utterance	On Child's Level	Eye Contact or Direct Conversation	Facial Expression	Interesting Intonation	Gestures	Touching	Conveyance of warmth and acceptance
1.	✓	✓	✓	✓			✓
2.			✓	✓			✓
3.	✓	✓	✓	✓	✓		✓
4.	✓		✓				✓
5.		✓	✓				✓
6.	✓		✓				
7.	✓	✓	✓	✓			
8.	✓		✓		✓		
9.			✓				
10.	✓		✓	✓			
Percent of total response	70%	40%	100%	50%	2[illegible]	0%	50%

This example indicates that the mother will need particular help with looking at the child, using interesting intonation, gesturing, touching, and conveying warmth and acceptance. The mother is close to the child and is using facial expression the majority of the time.

Checklist D is a general checklist to determine what verbal communicative skills the parent is using and how often the parent is using these skills. The parent advisor should observe the parent over a period of several weeks (about four home visits). At the end of each session, the parent advisor should check what parent verbal communication she observed and how frequently the parent used the verbal communication. If some of the verbal skills do not apply because the child does not demonstrate certain behaviors during a session (for example, baby does not cry during the session, so parent advisor cannot mark the item *parent responds when baby cries),* indicate n.a. (not applicable). At the end of the few weeks, the parent advisor will have profiles of the parent's verbal communication. For example:

Example #1

2. When child babbles, parent imitates and/or expands babbling.

Week	Never (0% of time)	Seldom (<30% of time)	Sometimes (30-70% of time)	Often (>70% of time)	Always (100% of time)
#1		✓			
#2		✓			
#3	✓				
#4		✓			

This profile indicates that the parent seldom imitates and/or expands the chil's babbling. The parent will need particular help with this skill in the Communication Skills' portion of the Communication Program.

Example #2

2. When child babbles, parent imitates and/or expands babbling.

Week	Never (0% of time)	Seldom (<30% of time)	Sometimes (30-70% of time)	Often (>70% of time)	Always (100% of time)
#1	✓				
#2			✓		
#3	✓				
#4				✓	

This profile indicates that the parent inconsistently imitates and expands the child's babbling. This parent, too, will need help with this particular skill.

Example #3

2. When child babbles, parent imitates and/or expands babbling.

Week	Never (0% of time)	Seldom (<30% of time)	Sometimes (30-70% of time)	Often (>70% of time)	Always (100% of time)
#1				✓	
#2					✓
#3					
#4					✓

This profile indicates that the parent imitates and expands the child's babbling a majority of the time (often-always). This parent will need minimal assistance with this verbal communication skill.

After this information is obtained and while the remainder of the Home Hearing Aid Lessons are being given, the parent advisor should begin presenting the Communication Information and Skill Lessons. After the lessons are completed, a post-assessment is conducted again using forms A, B, C, and D. This will indicate if the parents are comfortable with all the communication skills. If problem areas are indicated on the post-assessment, then the parent advisor might spend more time on these areas until the problems are resolved.

2. Informal Guide During Home Visit. This method follows the same recording procedure as in 1, but is not used as a pre-post assessment. The parent advisor may choose to use the forms at her own discretion. For example, Forms A and B could be used in the early weeks of the Communication Program; Form C could be used before and/or after teaching non-verbal skills lessons; and Form D could be used before and/or after teaching verbal skill lessons.

3. Observation Recorded After the Home Visit. Another method might involve casually observing one or more behaviors listed on forms A, B, C, or D and recording the observation immediately following the home visit, for instance in the car. While this method is inaccurate, it may be the only viable means to evaluate extremely self-conscious or easily intimidated parents.

4. Teaching Tool. Some parent advisors may choose to use the forms to evaluate a specific behavior or skill. For example, use Form A to determine the child's primary communication mode, or Form C to observe the parent's use of eye contact or intonation. Parents could use the forms to evaluate themselves as a weekly challenge.

Other suggested variations might include:

1. Parents use Forms A, B, or C to evaluate parent advisor as she models skills before parent is scored.

2. Use forms to evaluate other family members.

3. Parent advisor uses Form B (evaluating child's communication) *before* Form A (evaluating parents' communication). This may seem less threatening.

4. Parents and parent advisor together might score forms A, B, observing the child interact with someone else.

The goal of this skill assessment is not only to determine what communication skills the parents need help with, but also to reinforce parents for skills they already use.

Form A

Parent To Child Communication

	Parent Communication		Child Communication		
Utterance No.	**Verbal** (can include non-verbal)	**Non-Verbal** (only)	**No Response**	**Vocal** (can include non-vocal)	**Non-Vocal** (only)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
Percent of total responses					

Form B

Child to Parent Communication

	Child Communication		Parent Communication		
Utterance No.	**Vocal** (can include non-vocal)	**Non-Vocal** (only)	**No Response**	**Verbal** (can include non-verbal)	**Non-Verbal** (only)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
Percent of total responses					

Form C

Checklist of Non-Verbal Communication Within Utterances

Parent Utterance	On Child's Level	Eye Contact*	Facial Expressions	Interesting Intonation	Gestures	Touch	Conveyance of Warmth and Acceptance
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
Percent of total responses							

*Parent advisor should remind parents that when they are providing ad concham stimulation or using some other auditory stimulation skills, looking directly at the child may not be necessary.

Form D
Checklist of Verbal Communication

		Never (0% of time)	Seldom (<30% of time)	Sometimes (30-70% of time)	Often (>70% of time)	Always (100% of time)
1. Parent responds when baby cries with reassuring vocalizations (talk, hum, coo) instead of using pacifier, bouncing baby, etc.	Week					
	#1					
	#2					
	#3					
	#4					
2. When child babbles, parent imitates and/or expands babbling.	Week					
	#1					
	#2					
	#3					
	#4					
3. When child makes repetitive bodily motions, parent adds vocalizations to accompany child's motions.	Week					
	#1					
	#2					
	#3					
	#4					
4. When parent communicates to child, parent initiates new babbling for child to hear.	Week					
	#1					
	#2					
	#3					
	#4					
5. When parent talks to child, parent discusses meaningful daily activities of child (obvious "here and now" activities).	Week					
	#1					
	#2					
	#3					
	#4					
6. When parent communicates to child, parent talks about fun things that interest child (take advantage of child's natural curiosity).	Week					
	#1					
	#2					
	#3					
	#4					
7. When child expresses communicative intents (pointing, looking, tugging, vocalizing, etc.), parent responds with simple language.	Week					
	#1					
	#2					
	#3					
	#4					

FORM D (Continued)

		Never (0% of time)	Seldom (<30% of time)	Sometimes (30-70% of time)	Often (>70% of time)	Always (100% of time)
8. When parent talks to child, parent uses names of things rather than excessive use of pronouns or pointing.	Week					
	#1					
	#2					
	#3					
	#4					
9. When parent directs conversation to child, parent uses short simple sentences rather than long complicated ones.	Week					
	#1					
	#2					
	#3					
	#4					
10. When parent communicates to child, parent encourages child to take a turn (communicate back).	Week					
	#1					
	#2					
	#3					
	#4					
11. When child communicates to parent in any way, parent reinforces the communicative attempt.	Week					
	#1					
	#2					
	#3					
	#4					

Information Lesson I

Importance of Communicative Interaction

Outline/Parent Objectives

I. Parents will understand parent-child communication and the reason for its importance.
   A. Communication is interaction between parent and child in which messages are exchanged.
   B. Communication must be developed before language can develop.

II. Parents will understand that responding to their child leads to communication.
   A. The child cries or smiles and his parents respond.
   B. The child realizes that his actions have an effect on his parents and he communicates more.
   C. Warm, frequent responses encourage communication; negative, infrequent responses discourage communication.

III. Parents will understand how communication leads to language.
   A. First, frequent communicative interaction occurs.
   B. Then the child learns words and signs during these meaningful exchanges.

Materials

None

Lesson

Discussion. There is exciting information in the area of parent-infant communication. The next few weeks will be spent discussing the importance of parent-infant communication and learning how to communicate with the hearing impaired child. This discussion will show that the child is not a communication learner but an active participant in two-way interaction with his parents. This two-way interaction must occur for language to develop.

Communication Interaction. For many years it has been believed that parent and professionals could *pour* language into the hearing impaired child, and then, as if by magic, the child would give language back. It was thought that if the child could be taught language, he could then communicate. The idea looked something like this:

LANGUAGE ————→ COMMUNICATION

However, language does not lead to communication. There must be communication before language.

COMMUNICATION ——→ LANGUAGE

Communication is interaction. The child does or says something that causes a response from his parent and the parent says or does something that causes a response from the child. This communicative interaction leads to language.

Effect of child on parent. At birth, the baby does not really intentionally communicate ideas or feelings. For example, when the baby cries, he is not intentionally announcing that he is hungry and wants to be fed. The cry is more of a reflexive act. It is part of the act of being hungry and not a separate communicative behavior to announce hunger. The child, however, is aware that when he does cry, he receives attention and comfort from his parents. His cry has a definite effect on his parents. So he cries to get more comfort and satisfaction and soon the cry becomes a communicative act.

Smiling is another example. At first the smile is part of the act of feeling comfortable, but the smile has a definite effect on the parent. The parent responds to the baby's smile with more smiles and a cheery "Hi there." When the child realizes that his smiles have an effect, he continues to smile to make his mother smile. That is the beginning of communication.

These expressions from the child to get responses from those around him are called communicative intents. They include such things as crying, smiling, cooing, pointing, babbling, stretching, pulling, and grasping. These communicative intents have a definite effect on the parent. For example, the baby's cry affects parents in different ways. The effect of the cry on some parents is negative. They become anxious and irritated. The effect of the baby's cry on other mothers is positive. The mothers consider the cry to be communicative and respond happily by picking the child up, diapering, feeding, or talking to him. Babies whose mothers consider the cry to be communication instead of a source of irritation seem to be happier, better adjusted babies.

Effect of parent on child. Not only does the baby have a definite effect on the parents but the parent has a definite effect on the baby. Parents affect their babies' temperament. It was originally thought that difficult babies prompted their parents to become irritable, unpleasant human beings. It is now believed that the effect of the parents on the baby makes the baby difficult or easy. Parents seem to have high or low tolerance levels in coping with tensions. Easy-going parents who have high tolerance levels seem to have easy children. The parent's relaxed attitude affects the child and promotes contentment and relaxation in the child. Parents with low tolerance levels often have difficult children. Irritability, crying, and colic are symptoms of these difficult children.

Some fascinating research has been done on how speech rhythms of the parent affect the infant. The body of the baby seems to move in rhythm to the rhythms of the parent's speech. This is called synchrony. When mother says "How are you?" the baby's body moves in a different way than when mother says "Peek-a-boo." The parent's rhythm affects the baby's rhythms. Interestingly enough, the baby's left foot seem particularly sensitive to the rhythm of the parents. The baby's foot moves to the rhythm of the parent's speech. The infant is also affected by the body movements of the parents. For example, the baby will move his head away if mother "zooms" in too close. Mother will then move her head back and the baby will again turn and face mother.

Parent's effect on child's communicative intents. How parents respond to their child's cooing, crying, babbling, and gestures can have a profound effect on communication. When the parents are aware of the meaning of these communication intents and respond to the child warmly, it encourages communication. Something as simple as a gesture or smile might be an appropriate parental response.

The importance of parents' responding to the child's communicative attempts cannot be overemphasized. Many infants who have been institutionalized have shown drastic decrease in their communicative intents of babbling, vocal play and gestures because no adults were around to respond to them. In one study, adults were brought into an institution when the babies were 3 months old. The adults were instructed to respond to and interact with the babies. The vocalizations of the babies dramatically increased with responses from adults.

Another experiment found that if mothers responded to the baby's communicative intents by smiling, looking at and touching the baby while talking baby talk, the child would respond. If the mother did not respond to the infant's communication intents, there was no response from the baby.

Communication, then, will be developed if the parents are sensitive to the child's communicative intents and respond to them. If the parent ignores the child's attempts to communicate, communication will not be established. If there is not communication, there will be no language. When communication is frequent and relaxed, the child learns words or signs through this interactive base and that leads to language.

COMMUNICATION ⟶ LANGUAGE

Next time, what and how the child communicates to the parents, will be discussed. If parents know some of the basic things the child is trying to communicate and how he attempts to communicate, they can be more sensitive to these communication attempts and respond appropriately.

Review Questions For Parents

1. How would you define communication? interaction? Can you give some examples of your child's communication and interaction with you?

2. Give an example of your child's communication and discuss how you were affected, responded, or felt.

3. Give an example of some communication to your child and discuss how he was affected or responded.

4. Discuss the effects the parents' response or lack of response can have on a child's desire and ability to communicate. Give examples if possible.

5. How has this lesson been helpful to you?

Sample Challenges

None

Reference and Reading List

Bateson, M. C. (1975). Mother-infant exchanges: The epigenesis of conversational interaction. In D. Aaronson & R. Rieber (Eds.), *Developmental Psycholinguistics and Communication Disorders., Annals of the New York Academy of Sciences, 263,* 101-113.

Church, J. (1961). *Language and the discovery of reality.* New York: Vintage Books.

Condon, W., & Sander, L. (1974). Neonate movement is sychronized with adult speech: Interactional participation and language acquisition. *Science, 183,* 99-101.

Jaffe, J., Stern, D., & Peery, J. (1973). Conversational coupling of gaze behavior in prelinguistic human development. *Journal of Psycholinguistic Research, 2,* 231-329.

Lewis, M., & Freedle, R. (1973). Mother-infant dyad: The cradle of meaning. In P. Piner (Ed.), *Communication and Affect.* New York: Academic Press, New York.

Peery, J. (Ed.) (1976). *Understanding infants.* Logan, UT: Utah State University Printing.

Piaget, J. (1954). *The construction of reality in the child.* New York: Basic Books.

Rheingold, R., Gewitz, J., & Ross, H. (1959). Social conditioning of vocalizations in the infant. *Journal of Comparative Physiological Psychology, 52,* 68-73.

Information Lesson II

How An Infant Learns To Communicate

Outline/Parent Objectives

- I. Parents will understand that an infant is capable of learning and communicating
  - A. He can be taught to perform or imitate certain behaviors
  - B. He can change his parents' behaviors by his actions
- II. Parents will name the three important processes that occur as the infant learns to communicate
  - A. The infant learns about the objects and events in his environment
  - B. The infant learns that certain signals have meaning and that he, too, can make these signals to communicate
  - C. The infant learns how to interact with people
- III. Parents will understand the three qualities that help a child pay attention to objects and events
  - A. Motion
  - B. Frequency
  - C. Parents calling attention to particular objects and events
- IV. Parents will understand the two important factors that help a child to learn about and label objects
  - A. Memory
  - B. Categorizing

Materials

None

Lesson

Discussion. The hearing infant enters the world surprisingly well developed. He can immediately begin to learn about his environment and communicate his needs. The hearing impaired infant also enters the world completely capable of learning and communicating. However, communication for the hearing impaired child will be considerably more difficult since he cannot hear spoken messages.

The infant's ability to learn and communicate. Very young infants are capable of learning and communicating and are not merely little bundles of reflexes. An infant only a few months of age can intentionally change his mother's behavior by his vocal and non-vocal communication. The infant coos and smiles and knows that he will get a different reaction from his mother than if he screams and kicks. Infants can be taught when they are only a few weeks old to blink, kick, and close their fists in reponse to a cue. They can be taught not to cry for early morning feedings or to stop banging their heads or to smile more frequently. A six day old infant can imitate his mother sticking out her tongue and, if supported properly on a flat surface, can walk very much like an older child.

How the infant learns to communicate. The fact that all infants are capable of early learning and communicating has been proven. Discussing specifically how communication evolves will be helpful in developing useful communication in hearing impaired children. There are three important things that go on as the infant learns to communicate. First, the infant learns about the objects and events in his environment. Secondly, the infants learns that certain signals have meaning and that he, too, can make these signals for communication. Thirdly, the child learns how to interact with people around him. He is not a sponge that absorbs information but an active participant in learning and communication. However, the infant does not learn these things in this order. The three happen together and are absolutely necessary if communication is to be developed. The importance of the child learning about objects and events in his environment will be discussed first. It is important that the infant learns these three things if he is to communicate.

Learning about objects and events in the environment. Before the infant can talk about an object, for example, his bottle, he must know that a bottle exists and that a bottle is a meaningful object. He learns that certain things exist by seeing, feeling, smelling, hearing, or tasting them. He learns that certain objects and events are meaningful by paying particular attention to them. Fortunately, the child's nervous system is such that certain objects and events seem more important than others. For example, the newborn shows preference for mother's face by attending to it and ignoring faces of strangers.

The following will help the child pay attention to important objects and events around him.

1. **Motion:** Things around the infant are constantly moving. For example, his mother comes and goes, his mobile moves in the breeze, his hands move in and out of sight. It is easier for the infant to pay attention to objects that move than objects that do not. When the infant begins to play, he realizes that his rattle can be picked up and dropped, that the ball rolls towards him and then away from him. These objects that move in contrast to other things in the environment that do not move, such as the floor or a tree, take on particular importance for the baby.

Not only does the infant pay attention to certain objects that then become important, but he also pays attention to certain movements and events. The infant realizes that he can create an effect by kicking, splashing, or rolling. He realizes that certain movements greatly affect him, such as rocking and spanking. As the infant pays attention to these and other movements and events, they too take on particular meaning. Motion, in both objects and events, helps the child to pay attention.

2. **Frequency:** Objects and events that the infant sees frequently help him pay attention to them. For example, he regularly sees mother's face, his blanket, his bottle, and perhaps his favorite toy. Objects that appear frequently are given more attention by the infant than those that

seldom appear. When the infant is 2 to 4 months old, he realizes that objects that disappear will come back again. He will follow a moving object as it moves behind a screen and then anticipates it coming out from behind the screen. Objects that disappear regularly, such as mother leaving the room, but reappear frequently will be given particular attention by the child.

3. **Parents drawing attention to particular objects and events in the environment:** Parents use pointing or visual cuing with spoken attention getters to alert the child to important objects and events in the environment. Such phrases as "There's your toe." or "Stevie, look." combined with pointing, help the child to focus on important objects and events. As the baby begins to focus on these objects and events and expresses interest in them, parents can draw more attention to those things by imitating the child. For example, the child may cover his eyes with his hands. Mother will then imitate the gesture to draw attention to a peek-a-boo game. Or the child will tug on his blanket and his mother will repeat the action, drawing attention to the blanket and the tugging event.

Learning and labeling. As the child pays attention to important things around him, he begins to learn more about them. He begins to understand what they are for and know that they are meaningful in his life. For example, as the child pays attention to his bottle, he will begin to understand what it is for, that it contains a warm fluid, that he sucks it, that it makes him feel better. As the child learns these things about his bottle, he hears the label *bottle* said again and again. Soon the child knows that *bottle* is the label for the object with warm fluid in it. The more the child is given the chance to learn about objects around him by seeing, feeling, hearing, and exploring them, the sooner he will attach labels or names to those things. For example, a child who does not understand the meaning of objects may throw away every object he gets. As far as the child is concerned every object is the same thing, something to throw away. Since he does not understand the meaning of the objects, he has difficulty in labeling the objects. But as the child learns that you put certain objects in your mouth and chew them, that those objects are called *bananas* or *cookies*, or that you shake a plastic object to hear an entertaining sound and that object is called a *rattle*, then the infant is learning what objects are for and what they are called.

There are two important things that help the child to learn about objects and events and the labeling of them: memory and categorizing.

Memory. Memory plays an important part in the child's associating the object with its name. A child has to be able to remember that an apple is his mental picture of a red, round object so that when he hears the word *apple*, he will be able to remember the object, or when he sees the round, red object, he will remember the label *apple*. The child must know what objects and events are for and remember what they are called before he can communicate about them.

Categorizing. As the child learns more about things around him, he begins to categorize them into groups like cats, dogs, cookies. At first, however, the child thinks that there is only one object in a group if the object is very important. For example, the child thinks there is one mommy, one daddy, one blankey. But as the infant learns more about objects and events around him, he begins to categorize them. He makes a mental picture of the important parts of an object such as the fur, four feet, tail and whiskers of a cat. Then when the young child sees different cats, he realizes that they are all similar enough to be called *cat*. Categorizing objects helps the child learn more about their purposes and properties. He learns what makes things the same or different. Categorizing also helps the child in naming things since he doesn't have to call every object in the same group by different names (such as different kinds of cats).

Review Questions For Parents

1. Give examples of a young child communicating or learning about his environment.
2. Discuss the three important things that go on as a child learns to communicate.
3. Can you give examples of the three things that help your child pay attention or show interest?
4. What is the most important thing you got out of this discussion?

Sample Challenges

None

Reference and Reading List

Appleton, T., Clifton, R., & Goldberg, S. (1975). Development of behavioral competency in infancy. In F. D. Horrowitz (Ed.), *Review of child development and research volume 4*. Chicago: University of Chicago Press.

Bloom, L. & Lahey, M. (1978). *Language development and language disorders*. New York: John Wiley and Sons, Inc.

Bower, T. G. R. (1974). *Development in infancy*. San Francisco: W. H. Freeman and Co.

Lewis, M., & Freedle, R. (1972). *Mother-infant dyad: The cradle of meaning*. Princeton, NJ: Education Testing Service.

Menyuk, P. (1974). Early development of receptive language from babbling to words. In L. L. Lloyd (Ed.), *Language perspectives, acquisition, retardation and intervention*. University Park Press.

Murphy, C., & Messer, D. (1977). Mothers, infants, and pointing: A study of a gesture. In H. Schaeffer (Ed.), *Studies in mother-infant interaction*. (pp. 325-354). London: Academic Press.

Palby, S. (1977). Imitative interaction. In H. Schaffer (Ed.), *Studies in mother-infant interaction*. (pp. 203-224). London: Academic Press.

Sinclair, H. (1973). Language acquisition and cognitive development. In T. Moore (Ed.), *Cognitive development and the acquisition of language*. New York: Academic Press.

Stone, L. J., Smith, H. T., & Murphy, L. B. (Eds.). (1973). *The competent infant*. New York: Basic Books.

Tronick, E. (1972). Stimulus control and the growth of the infant's effective visual field. *Perception and Psychophysics, 11*, 373-376.

Wright, L., Nunnery, A., Eichel, B., & Scott., R. (1968). Application of conditioning principles to problems of tracheotomy addiction in children. *Journal of Consulting and Clinical Psychology, 32*, 603-606.

Information Lesson III

Signals Important For Communication

Outline/Parent Objectives

- I. Parents will understand some visual and auditory abilities of infants
  - A. An infant shows preference for certain shapes and patterns; he recognizes differences in colors and sizes; he is far-sighted for about six months and has no depth perception
  - B. An infant recognizes that there are differences among speech sounds and among varying pitches; an infant also knows the difference between speech and non-speech, friendly and unfriendly voices, and male and female voices
- II. Parents will understand how the infant knows which visual and auditory signals are important for communication
  - A. Speech, signs, facial expressions and gestures are the primary signals used in communication
  - B. Parts of the body that make these signals are movable and flexible
  - C. Signals associated with meaningful events become communication signals
- III. Parents will understand what factors make signals more meaningful
  - A. Intonation
  - B. Facial and body expression
  - C. Repetition
  - D. Simplicity
  - E. Directness
- IV. Parents will understand some differences in the vocal sounds of hearing and hearing impaired infants
  - A. Hearing impaired infants vocalize less often
  - B. Hearing impaired infants use mostly vowel sounds
  - C. Hearing impaired infants use minimal variety and poor articulation in their utterances

Materials

None

Lesson

Discussion. From the moment of birth, the infant is exposed to thousands of new sights, sounds, smells, tastes, and feelings. Somehow in this mass confusion of stimuli, the child must sort out what is important and what is not. He must sort out meaningful communication signals such as speech sounds, gestures, and signs from other signals. Before an infant knows which signals are important for communication, he must be able to see and hear those signals.

The infant at birth is ready to see patterns, respond differently to colors, shapes, and sizes; he uses his eyes to learn. The infant is aware of light from birth; he can see many objects around him. However, because the infant is born far-sighted, it is not until he is about six months old that he can focus easily on objects both near and far. During the first two days of life, infants pay particular attention to certain shapes such as faces and circles. The baby shows visual preference for patterns over non-patterns. An infant 15 days old knows the difference between such colors as red and green. The newborn recognizes differences in sizes. However, the newborn does not have depth perception, that is, realizing that objects far away only appear small because of distance. Depth perception begins to develop when the child is about 6 months.

The hearing infant as young as 1 month knows that one speech sound is different from another one, such as /pa/ vs. /ga/. Infants a little over one month know the difference between a sound such as /ba/ spoken with the voice going up or going down. They also know the difference between words spoken with the voice going up ("That's great!") and words spoken with the voice going down ("Too bad."). Babies also know the difference between speech and non-speech, friendly and unfriendly voices, and male and female voices. The hearing impaired child may have difficulty hearing these differences. Of course, the hearing impaired child's ability to hear the differences among speech signals will vary depending on the amount of hearing he has. Amplification and training will help the hearing impaired child to better hear these sound signals.

Signals important for communication. How does the infant know which signals are important for communication and which are not since he is exposed to so many signals? Sound signals are one example. The child is exposed to thousands of sounds: music, cries, grunts, squeals, squeaks, electrical appliances, Daddy calling to Mother, Mother talking to the child, the T.V. and radio, big brother banging on the wall, and a host of others. If the child thought all of these sounds were equally important for communication, it would be a hopelessly long and involved task for him to learn these sounds for communication purposes.

Consider hand and body movements as signals. If the child did not have a way of sorting important communication signals such as gestures and signs from unimportant hand and body motions, such as swatting a fly, he would probably never be able to communicate.

Fortunately, the infant is able to sort important communication signals from unimportant signals. It is probably no accident why certain signals, such as speech, gestures, signs, and facial expressions, are used for communication. The parts of the body that make these signals, voice box, mouth, hands, and face, are particularly flexible parts of the body. We can communicate a variety of ideas by moving our hands, faces, mouths, and voice boxes in many different ways.

As the parent combines these hand, facial, and vocal communication signals with meaningful events such as picking up the crying baby, patting and rocking the baby and saying "There now, don't cry. Mommy's here" the infant begins to realize that certain signals are more important than others. Signals associated with meaningful events become communication signals. Signals associated with such things as feeding, comforting, diapering, and playing are particularly important communication signals to the child. The infant realizes that these signals associated with meaningful events are important communication signals and other signals around him are not.

Some communication symbols are more important than others. The infant also realizes that some communication signals are more meaningful than other communication signals. Some words or sentences are more important than others; some ways of communication are more meaningful than others. The infant will pay attention to the more important communication signals and learn them first. There are specific factors that help infants to know which communication signals are the most important. Some of them are:

1. **Intonation:** Vocal and speech signals with intonation are more meaningful to the child than those without intonation. Intonation is the melody or the up and down of the voice. Many researchers believe that interesting intonation is perhaps the most important thing parents use to get the child's attention and to emphasize what they say to the child. It is much more likely that the child will pay attention to "You're such a big boy." if it is said with interesting melody than "You're such a big boy." said in a very deadpan way. The child will realize that what is said with intonation is interesting. He will consider speech with intonation more important than speech without intonation.

2. **Facial and body expression:** The infant learns that facial expressions, gestures, and other body language make certain communication signals more meaningful than others. Infants enjoy feeling and seeing motion. To say and wave "bye-bye" is much more meaningful for the child than to just say "bye-bye." If mother's face lights up and she exclaims "Good boy!" the message is much more meaningful than "Good boy" said with a blank stare.

3. **Repetitions:** The more often a child hears a word, or sees a sign or gesture, the more meaningful that communication signal will become. Words or signs such as Mommy, Daddy, cookie, up, and no-no are often the first words used by a child simply because those are the ones heard and seen most frequently.

4. **Simplicity:** Communication signals that are simple are more meaningful to the child than complicated ones. Research indicates that babies prefer short sentences and expressions to rhetorical sentences and the use of complicated phrases and clauses. Infants will attach more meaning to short, simple communication signals than long, complicated ones.

5. **Directness:** In one of the most exciting areas of recent research, it has been found that babies only a few months of age respond best to communication if they are looked at and if the communication is directed to them. A movie entitled "Benjamin" illustrated this idea. The young baby Benjamin was seated on one side of a window. The baby's mother was on the other side. As the mother communicated with Benjamin, he responded with coos, smiles, and body language. When the mother continued to look at Benjamin but suddenly did not direct her conversation to him (mother talked "adult talk" to someone else in the room) Benjamin turned his head and tuned his mother out. When the mother talked to Benjamin but did not look at him, he showed little interest in what was being said. Babies attach more meaning to communication signals if parents look at them while using the signals and if parents direct the conversation to them.

Child's use of signals. After the child sees and hears communication signals and knows which ones are the most meaningful, he will begin to use these signals. The child will use sounds such as coos, grunts, cries, babbling, and vocal play. The hearing impaired infant may use some vocal sounds differently than the hearing infant because he is not hearing speech sounds the same way as the hearing child. Some of these differences are:

1. The hearing impaired infant may vocalize (babble) less often than the hearing infant.
2. The hearing impaired infant may use mostly vowel sounds in his babbling, whereas the hearing infant typically uses vowel and consonant sounds.
3. The hearing impaired infant may have less variety in his babbling and the babbling may sound less well articulated than the hearing child's babbling.

The hearing impaired child may use other signals such as facial expressions, body motions, and perhaps signs. All of these are very important in helping the child to express himself.

The important thing for parents to understand at this time is that their infant is learning which signals are important for communication. Parents can help to make certain communication signals more important than others by using them in meaningful interaction with intonation, facial and body expressions, simplicity, repetitions, and directness. Parents will work specifically on each of these areas later. The child will then begin to use these communication signals to communicate with those around him.

Review Questions For Parents

1. What sound and visual abilities do young infants show?
2. How does a child determine which vision and auditory signals to pay attention to?
3. What attributes or factors make these signals more meaningful? Give examples.
4. Why do you think this is important information for you to know?

Sample Challenges

None

Reference and Reading List For Parent Advisors

Bloom, L., & Lahey, M. (1978). *Language development and language disorders*. New York: John Wiley and Sons.

Blount, B., & Padgug, E. J. (1976). Prosodic, paralinguistic and interactional features in parent-child speech: English and Spanish. *Journal of Child Language, 4,* 67-86.

Bower, T. G. R. (1966). The visual world of infants. *Scientific American, 215,* 80-92.

Eimas, P. Siqueland, E. R., & Jusezyk, P. (1971). Speech perception in infants. *Science, 171,* 103.

Fant, G. (1972). Spontaneous vocalization and babbling in hearing impaired infants. *International Symposium on Speech Communication Ability and Profound Deafness,* pp. 163-171. Washington, D. C.: A. G. Bell Association.

Kagan, J. & Moss, H. (1962). *Birth to maturity*. New York: John Wiley and Sons.

Longhurst, T., & Stephanich, L. (1975). Mothers' speech addressed to one, two, and three year-old normal children. *Child Study Journal, 5,* 3-11.

Morse, P. A. (1972). The discrimination of speech and non-speech stimuli in early infancy. *Journal of Exceptional Child Psychology, 14,* 477-492.

Nelson, K. (1977). Early speech in its communicative context. (Yale University). Paper presented in Chapel Hill, North Carolina.

Snow, C. (1977). The development of conversation between mothers and babies. *Journal of Child Language, 4,* 1-22.

Suzuki, T., Kanijo, G., & Kiuchi, S. (1964). Auditory tests of newborn infants. *Annals of Otology, 73,* 914-23.

Reading List For Parents

Gordon, I. J. (1975). *The infant experience.* Columbus, OH: Charles E. Merrill.

Pushaw, D. (1976). *Teach your child to talk: A parent guide.* Fairfield, NJ: Cebco Standard.

Information Lesson IV

Infant Communication: Why A Child Communicates

Outline/Parent Objectives

I. Parents will understand the uses of infant communication
   A. *Personal Use:* to express oneself rather than communicate to others
      1. Pretend
      2. Practice
      3. Accompany action
      4. Express emotion
   B. *Instrumental Use:* to get something or to manipulate others to do something
      1. Get help
      2. Get object
      3. Get permission
      4. Get action
      5. Protect
   C. *Social Use:* to communicate with others
      1. Initiating
         a. Requesting information
         b. Declaring
         c. Greeting
         d. Getting attention
         e. To be together
      2. Responding
         a. Answering or replying
         b. Imitating

II. Parents will understand that helping the child acquire a variety of reasons to communicate will increase the child's language growth

Materials

None

Lesson

Knowing why and how a child communicates can help a parent be more sensitive to communication attempts and to respond more effectively. This lesson considers why infants communicate.

Parents will recall that the newborn does not initially cry, smile, or gurgle to communicate ideas or feelings. The cries and smiles are part of the acts of feeling comfort or distress. After the infant realizes that his cries and smiles elicit a definite response from his parents, then he repeats the cries or smiles with the intention of getting further responses. That is the beginning of communication.

The child continues his attempts to get responses from those around him by doing such things as whimpering, gurgling, babbling, and smiling. By the time the infant is several months old, he realizes that he can elicit a variety of responses from those around him by communicating in different ways.

The *use* of communication is related to *why* a child communicates. There are three major ways the young child uses communication. The reasons why the child uses communication in these ways are discussed below.

Personal use. The infant uses communication to express himself rather than to communicate with others. There is no apparent intention to get something or contact others. For example, the child may (a) use pretend communication: doll says, "I'm sleepy"; (b) practice making vocal sounds; (c) use communication to accompany actions: child says "oh, oh" as he falls down; and (d) use communication to express emotion: "Ow!"

Instrumental use. The child uses communication to get something or to manipulate others to do something. For example, (a) get help: child is stuck in crib and cries; (b) get object: child points to cookie; (c) get permission: child goes to open door and looks back at parent; (d) get action: child stretches up arms to be picked up; and (e) protect: child shakes head "no."

Social use. The child uses communication to get, maintain or to respond to social contact. In social acts, the other person is important as a person, not just to serve the child's needs. The child may initiate the social communication. For example, (a) requesting information: "Dat?" pointing; (b) declaring: "Da" — dog; (c) greeting: "Hi"; (d) getting attention: show dad his boat; and (e) to be together: climbs on parent's lap. Or the child may respond to social communication. For example, (a) child may answer or reply: parent says "Where's your nose?" and child responds "No" (points); (b) child may imitate parent's communication.

Many hearing impaired children tend to communicate for only a few reasons such as in a crisis or to demand or to reject. Subsequently, parents expect little communication from them and the child acts accordingly. Parents also miss many opportunities to teach a child that his behaviors can have communicative effects. Therefore, as the child becomes older and more physically competent, he can fulfill his needs himself without communicating to others and the problem worsens.

The child needs to be encouraged and shown that his expressions, gestures, sounds and words can be used for a variety of reasons. Parents should be concerned about the child's learning to communicate for different reasons other than just learning a list of words. The more uses a child has for communication, the more opportunities there are for language growth. Unless a child communicates for many reasons, such as getting and giving help, information, and attention, his language development will be limited.

Review Questions For Parents

1. Can you give examples of your child's personal, instrumental, and social use of communication?

2. Why do a variety of uses offer more language opportunities?

3. Why do adults sometimes behave toward hearing impaired children as though they do not expect them to communicate? What effect does this have on the child?

4. How might parents increase their child's uses of communication?

Sample Challenges

1. Observe your child. Make a list of his attempts to communicate. List these attempts as personal, instrumental or social uses.

2. Describe the activities your child is involved in when he communicates to someone.

Reference and Reading List For Parent Advisors

See reading list for Information Lesson V, pages 287 and 288.

Information Lesson V

Infant Communication: How A Child Communicates

Outline/Parent Objectives

I. Parents will understand that young children can communicate without words
  A. Gazing
  B. Pointing and other gestures
  C. Facial expressions
  D. Jargon

II. Parents will understand that all behaviors can communicate
  A. Non-speech forms as well as speech forms can send messages
  B. Every child is ready to communicate in some way

Materials

None

Lesson

The child uses a variety of communication signals to serve the purposes discussed in Lesson IV. During the first year and one half of life, several non-speech signals are particularly important in the child's communication. They are:

Gazing. Gazing is perhaps the earliest form of communication. Gazing is a mutual act between mother and infant. The eye-to-eye contact usually occurs with mother and infant smiling, touching or vocalizing to each other. One researcher called the times when the infant gazes at his mother and vocalizes the *special moments* in early infant communication.

Pointing and other gestures. The use of gestures by the infant is of great importance. Since the child does not have sophisticated speech or signing ability, the use of a single gesture may be used in place of many words, signs or sentences to express an idea. For example, the child points to his shoe and perhaps says "oo." The child's message is: "Mother, please put on my shoe." or "I want you to take this shoe off." Research suggests that gestures may be particularly important in the communication development of the hearing impaired child.

The two main purposes of gestures are to refer to objects and actions and to show relationships between objects and actions. The hearing impaired child *points* to refer to particular objects or to signify words such as *this*, or *there*. Action words are indicated by an imitation of the particular action such as moving the hand to the mouth to indicate *eat* or sweeping the hand forward to indicate *no*. Gestures are also used to show relationships between objects and actions.

The hearing impaired child may link objects to actions by using gestures and vocalizations. For example, the child may point to water and say *wa* and then use the *gimme* gesture. He is saying "give me water." The communication is there. The parent is now responsible for plugging in the words or signs of conventional language.

Facial expressions. One of the most delightful aspects of early communication is observing and responding to the infant's facial expressions. A mother of a hearing impaired infant remarked that she was dumbfounded at the number of different emotions she noticed in her child's facial expressions when she was consciously aware of the expressions. She noticed pleasure, fear, uncertainty, wonderment, surprise, anger, contentment, anxiety, and peace, among others. Due to the mother's awareness of the child's expressions, she was able to respond appropriately and promote communication.

Babbling with intonation. Babbling is the repetition of a variety of sounds. It is believed that initially the child uses babbling for vocal play and that he continues to babble because he enjoys the feel of it. Soon, however, the child learns that babbling is enjoyable not only because of how it feels and how it sounds, but also because it elicits a response in others. It provides the parent an opportunity to encourage communication by responding and an opportunity to teach a word for the sound; for example, "Da-da. There is daddy." Parents should maintain the child's babbling by allowing the child to babble without interruption. If the parent interrupts the baby during babbling, the infant will be less likely to continue babbling. Instead, the parent should wait until the baby is finished babbling and then reinforce the child by imitating the babbling and expanding it. For example,

Child: "Ba-ba"
Mother: "Ba-ba; yes, that's your bottle."

Babbling usually begins by the child repeating a series of the same sounds. He may next babble in double and single syllables /ba, ba/, /ga/ and then use different sounds in chains of babbling: /ga guh/, /ba, ba, do/. The child continually adds more inflection and rhythm to his babbling. The parent advisor may want to refer to "Child's Use of Signals" in Lesson III to describe the difference between the babbling of hearing and hearing impaired infants. See "supplemental information" at the end of this lesson for more information on babbling.

Jargon. Jargon is the use of short sentence-like utterances that have no particular meaning. Jargon can be a string of meaningless sounds used with a great deal of intonation. Or it can be a series of meaningless hand motions used with rhythm and emphasis, which precedes signing. It seems that jargon is the child's attempt to practice sentence patterns and play with strings of sounds or hand motions.

Perhaps the most important purpose of jargon is that it provides the child a chance to express his emotions. The child can show disgust, anger, fear or joy through his intonation and rhythm patterns without needing to use words or signs. Often children move directly from babbling to jargon. However, some children move from babbling to one-word naming and then to jargon. Others use jargon in combination with one-word naming. However the child uses jargon, it is an important step in the development of language.

A child need not *intend* to send a message in order for it to be effective communication. For example, a child may rattle his crib and the mother may take that to mean "I want out" even though he may have been just playing. Or a child may say "uh uh" as he tries to open a can of toys and if we say "Want some help?", he may realize that his sound communicated a message. The important thing to remember is that any of these non-speech forms can communicate and that every child is ready to communicate in some way. If parents are responsive to the non-speech communication forms that the infant uses, the child learns that his behaviors can communicate. Soon the child will move from the use of these non-speech forms to the use of speech or sign forms beginning with one word, then two word combinations and then on to longer and more complex sentences.

Review Questions For Parents

1. Give examples of your child's gestures, facial expressions, babbling and jargon (if appropriate) that communicate messages. Describe.

2. Discuss how responding to and interpreting a behavior can encourage more communication. Give examples.

Sample Challenges

None

Supplemental Information

There is some difference of opinion as to whether the child must *babble* a sound before he can later say it. Some research indicates that the infant babbles many sounds that he later drops, never using them in his speech. This implies no connection between babbling and later speech. However, other research seems to indicate that babbling is necessary for later speech. There are some strong similarities between babbling and what the child later says, suggesting that babbling provides practice for later speech.

For example, babies use single consonants /s/, /t/, /p/, instead of blends (/st/, /tr/, /sc/) in babbling and in later child speech. Other similarities between babbling and later child speech are: (a) avoiding the use of final consonants in words, (b) avoiding breathiness in sounds such as /p/, /t/, /k/, (c) making substitutions such as /w's/ and /y's/ for /l's/ and /r's/, or /p's/ and /b's/ substituted for /f's/. These and other findings suggest that a baby must babble a sound before he can use it in later speech.

Reference and Reading List For Parent Advisors

Bateson, M. C. (1975). Mother-infant exchanges: The epigenesis of conversational interaction. In D. Aaronson & R. Rieber (Eds.), *Developmental psycholinguistics and communication disorders. Annals of the New York Academy of Sciences, 263,* 101-113.

Denhoff, E., & Hyman, I. (1976). Meeting street school language development scale. In *Intervention strategies for high risk infants and young children.* Baltimore: University Park Press.

Griffin, P. M., & Sanford, A. R. (1975). Learning accomplishment profiles for infants. (Funded by BEH, Office of Education. Winston-Salem, NC: Kaplan Press.

Halliday, M. (1973). Explorations in the function of language. New York: Elsevier North Holland.

Halliday, M. C. (1975). *Learning how to mean.* London: Edward Arnold Publishers.

Horton, K. B. (1974). Infant intervention and language learning. In R. S. Schiefelbusch & L. Loyd (Eds.) *Language Perspectives, Acquisition, Retardation and Intervention.* Baltimore: University Park Press.

It's impolite to interrupt—especially your baby's babble. News article in *Deseret News* (AP) Friday, Dec. 5, 1975, Salt Lake City, Utah.

Jaffe, J., Stern, D., & Peery, J. (1973). Conversational coupling of gaze behavior in prelinguistic human development. *Journal of Psycholinguistic Research, 2,* 321-30.

Jakobson, R. The sound laws of child language and their place in general phonology. In A. Baradon, W. F. Leopold (Eds.), *Child language: A book of readings,* pp. 75-82. Englewood Cliffs, NJ: Prentice Hall.

Kretschmer, R. R., & Kretschmer, L. W. (1978). *Language development and intervention with the hearing impaired.* Baltimore: University Park Press.

Language in deaf children: An instinct. *Science News, 112,* 70.

McCarthy, D. (1954) Language development in children. *Manual of child psychology (2nd edition).* New York: John Wiley and Sons.

Menyuk, P. (1974). Development of receptive language: Babbling to words. In R. Schiefelbusch and L. Lloyd, (Eds) *Language Perspectives, Acquisition, Retardation, and Intervention.* Baltimore: University Park Press.

Oller, D. K., Wieman, L., Doyle, W., & Ross, C. (1976). Infant babbling and speech. *Journal of Child Language, 3,* 1-11.

Information Lesson VI

Introduction to Aural-Oralism and Total Communication

Note: The last five lessons have been discussions on parent-infant communication. The next three lessons provide information to parents about making the communication method decision (aural-oralism or total communication). After these three lessons, parents will collect information that will be used in making the communication methodology decision while they resume discussions on parent-infant communication.

Outline/Parent Objectives

I. Parents will understand the difference between total communication and aural-oralism.
   A. Total Communication is a philosophy which embraces the use of signs and fingerspelling, the use of hearing aids, speech-reading and speech.
   B. Aural-Oralism is a philosophy advocating the use of hearing and speech supplemented by speechreading.

II. Parents will understand that communication systems for the deaf go from the use of oral speech on the one hand to manual communications on the other. There is no sharp dividing line but a continuous flow. The intent of the SKI*HI Model is to help parents find the appropriate way of communicating for their child.

III. Parent advisors will understand that educators of the deaf, deaf people, and parents of deaf children frequently do not agree on terms or definitions associated with aural-oralism and total communication. This discussion is a guideline for parent advisors and must be tempered by local considerations. If the following terms and concepts do not meet with local definitions and philosophies, they will need to be modified accordingly.

Materials

None

Lesson

Introduction. In all the controversy over best communication methods for hearing impaired children, one plain, simple fact emerges: no one communication method is best for all children and their families. Since parents vary widely in their interaction styles, attitudes, and values, and since hearing impaired children vary widely in their abilities to process auditory information and use visual information, no one communication method can possibly best suit the needs of all children and their families. Aural-oralism is not the best method for *all* children and their families. Total communication is not the best method for *all* children and their families.

This lesson describes aural-oralism and total communication. It will help family members understand what is involved in using these two basic communication methodologies. The next two lessons discuss considerations that will help family members decide what communication method will be most appropriate for them. After these lessons, parents and parent advisors will continue to explore these considerations and will periodically discuss them using the "Monitoring Sheet For Communication Method Decision" which is presented in Lesson VIII. This monitoring sheet will assist parents and parent advisor to make the communication method decision.

Brief description of aural-oralism and total communication. Parent advisors explain to parents what aural-oralism and total communication are in their broadest senses.

1. **Aural-Oralism** is a philosophy of communication which embraces all possible avenues of auditory-oral communication. Hearing is used as the primary means of understanding language. Hearing is supplemented by attention to lip clues (speechreading) and facial expressions. Speech is used as the primary means of expressing language.

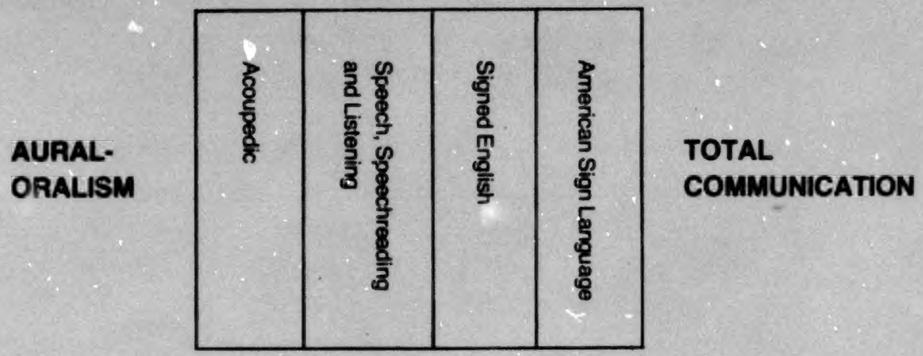
2. **Total Communication** is a philosophy of communication which embraces any or all functional communication systems. Signs and fingerspelling, speech, gestures, hearing and speechreading are used for the understanding of language. The primary means of expressing language is signing and fingerspelling used with speech.

Aural-oralism — total communication continuum. Parent advisors tell parents that there is no sharp dividing line between aural-oralism and total communication but a continuous flow. The following diagram shows how these systems are a continuous flow.

AURAL-ORALISM	Predominant Use of Speech and Listening (Acoupedic)	Predominant Use of Speech, Speechreading, and Listening	Predominant Use of Cued Speech	Predominant Use of Speech, Speechreading and Listening with a lot of Animation and Gesturing	Use of Both Aural-Oralism and Total Communication	Predominant Use of a S.E.E. System	Predominant Use of Signed English	Predominant Use of American Sign Language and Fingerspelling	Pantomime/Gestures	**TOTAL COMMUNICATION**

As can be seen when reviewing the continuum, there are different ways that total communication and aural-oralism can be used. *The intent of the SKI*HI Model is to help parents find a joyous way of communicating with their hearing impaired child somewhere along the continuum.*

Parent advisors briefly discuss the different ways of communicating that are listed. For some parents, it may be advisable for parent advisors to present only a few of the most basic communication possibilities such as: (a) American Sign Language, (b) Signed English, (c) Speech, Speechreading and Listening, and (d) Speech and Listening (Acoupedic).



Demonstrations of the various communication approaches may be given. Brief descriptions of the communication possibilities follow:

1. **Pantomime:** Pantomime is the use of expressive bodily or facial movements to communicate an idea or concept.

2. **Gestures:** The use of gestures is a way of communicating non-verbally. Gestures are actions that are used to communicate basic ideas. There is not one specific gesture system, but many of the same gestures are used and understood to mean a certain idea. Some familiar gestures are waving good-bye or pointing to indicate location. Children often use gestures as part of their total communication system.

3. **American Sign Language (ASL):** This manual language system is widely used by deaf adults. It is comprised of signs which are hand configurations that express thoughts. It uses individual signs to represent whole concepts instead of signs to represent words. ASL sign order may not conform to spoken or written English word order.

4. **Fingerspelling:** Fingerspelling is the representation of each letter in the alphabet by a specific placement or form of one's fingers. Some of the hand shapes actually look like the letter represented.

5. **Signed English:** This is a term which refers to systems using ASL signs in English word order. Signed words parallel English words in meaning because attention is given to English syntax.

6. **S. E. E. Systems:** S. E. E. systems sign English exactly as it is spoken. The most widely used S. E. E. system is *S*igning *E*xact *E*nglish. In this system, words that sound the same and are spelled the same have the same sign even though their meanings are different. This is different from Signed English or ASL where words with different meanings typically have different signs. Abundant inflections are used in this system such as -s, -ed, -ment, and -ly.

7. **Use of both aural-oralism and total communication:** This approach involves use of both aural-oralism skills (emphasis on speechreading and listening) and total communication skills (emphasis on signs synchronized with speech). At times it might be appropriate for the communicator to emphasize oral skills. At other times it might be appropriate to emphasize total communication skills.

8. **Speech, speechreading, listening with some signs:** This approach emphasizes the use of speech, listening and speechreading and the use of a few supplemental signs as necessary.

9. **Speech, speechreading, listening and animation:** This approach emphasizes the use of speech, listening and speechreading supplemented by the frequent use of gestures, facial expressions, and other body signals.

10. **Cued speech:** This system is used to provide visual cues for the hearing impaired during speech. The speaker uses hand formations that indicate how the articulator's lip, tongue, and throat move. This helps the hearing impaired child to discriminate between words that look the same on the lips but sound different. (For example, *pea/bee*)

11. **Speech, speechreading and listening:** This approach emphasizes the use of listening, speaking and attention to lip clues (speechreading).

12. **Speech and listening:** This approach (sometimes called the Acoupedic or Unisensory Approach) emphasizes the use of listening and speaking. The child is not encouraged to use lip clues.

The references used in deriving these definitions were: (a) Caccamise, F.C., Drury, A.M. A review of current terminology in education of the deaf. *Deaf American*. Sept., 1976. p. 7-10; (b) Stokoe, M.C. CAL Conference of sign language. *Linguistic Reporter,* April, 1972 p. 5-6; (c) Musselwhite, C.R. and St. Louis, K.W. (1982). *Communication programming for the severely handicapped: vocal and nonvocal strategies.* San Diego: College Hill Press; (d) Gustason, G., Pfetzing, D. and Zawolkow, E. (1980). *Signing exact English.* Los Alamitos, CA: Modern Sign Press.

Deciding on a Communication Method

Parent advisors tell parents that the next lessons will discuss ways of helping family members decide what communication method will be best for them. This evaluation for a communication method will help family members decide if aural-oralism (in its broadest sense) or total communication (in its broadest sense) is best for the family. The use of a *specific* communication approach within aural-oralism or within total communication (see continuum above) should be left up to the discretion of the parents and parent advisor. The SKI*HI Model does have one suggestion in regard to this. The use of a sign system with English syntax is recommended for *hearing* parents of hearing impaired children since that is how hearing parents naturally communicate. Deaf parents of deaf children may prefer to use American Sign Language.

Review Questions For Parents

1. What is aural-oralism?
2. What is total communication?
3. What is meant by the statement "Aural-oralism and total communication are not sharply divided?"
4. What are some different ways that aural-oralism can be used?
5. What are some different ways that total communication can be used?

Sample Challenges

None

Information Lesson VII

Evaluation For Aural-Oralism or Total Communication - 1

Outline/Parent Objectives

I. Parents will understand that there are three important considerations in making a communication method decision
   - A. Child characteristics and skills
   - B. Parent skills and interests
   - C. Probable outcome of using different communication methods considered in light of parent values

II. Parents will understand that there are four basic child characteristics and skills which need to be considered in making a decision to use total communication or aural-oralism
   - A. Age of child
   - B. Amount of aided residual hearing
   - C. Other handicaps
   - D. Child's visual vs. auditory orientation

III. Parents will understand that there are four basic parent skills and interests which need to be considered in making a decision to use aural-oralism or total communication
   - A. Parent interest in learning and using total communication and helping the child acquire total communication abilities
   - B. Parent interest in using aural-oralism and helping the child acquire aural-oral abilities
   - C. Parent interaction styles
   - D. Parent visual-perceptual skills

Materials

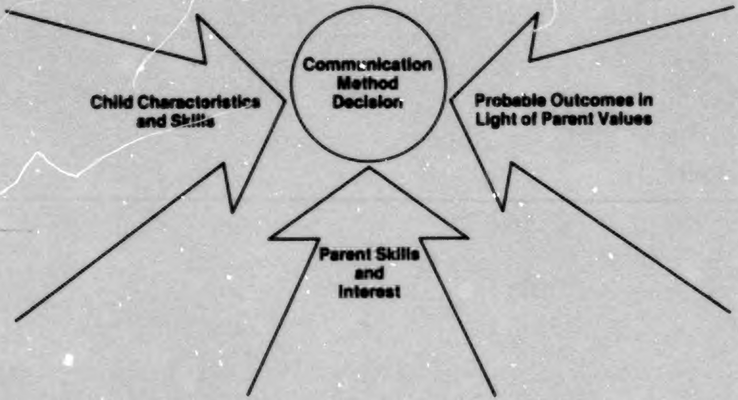
None

Lesson

Introduction. As discussed in the last lesson, there is not one best way of communicating for all hearing impaired children and their families. Families vary widely in their interaction styles, attitudes and values, and hearing impaired children vary widely in how they process auditory and visual information. So the point is not to declare one communication method better than another but to arrive at a decision as to the most appropriate communication method for the hearing impaired child and his family. The next two lessons will discuss the important factors that should be considered in making a communication method decision. After these two lessons have been presented, parents and parent advisors will continue to explore these factors and discuss them using the "Monitoring Sheet For Communication Method Decision" which is included in the following lesson. This on-going exploration and dialogue forms the basis upon which an appropriate communication system can be selected for the hearing impaired child and his family.

Considerations in deciding to use aural-oralism or total communication. Parent advisors tell parents that there are three main considerations in making a decision to use aural-oralism or total communication: (a) child characteristics and skills, (b) parent interests and skills, (c) probable outcomes of using different communication methods considered in light of parent values.

While all three areas must be carefully explored with the parents, the child's needs must be the main considerations in determining an appropriate communication method for the family. Using information from all three areas, parents and professionals in time can make a decision about the most appropriate communication method for the family.


Communication Method Decision
Child Characteristics and Skills
Probable Outcomes in Light of Parent Values
Parent Skills and Interest

Child characteristics and skills. Parent advisor discusses the following child characteristics and skills that need to be considered in making a communication method decision.

1. **Age of child.** The determination of the communication method should be made when the child is very young. In general, total communication is easier to learn since signs are easier for a hearing impaired child to see than words are to hear. When a child is over three years of age at the time his hearing loss is identified, it may be more advisable to use total communication.

2. **Amount of aided residual hearing.** In general, the more aided hearing the child has, the more likely an aural-oral approach will be appropriate. The greater the hearing loss, the more likely a total communication approach will be appropriate.

3. **Other handicaps.** If the child's language development is affected by other handicaps (especially handicaps affecting language development such as mental retardation), signs may be the easiest way for the child to acquire language since they are obvious and easy to understand.

Note: Special adaptions of signs are necessary for children who have serious visual and/or motor problems. Contact SKI*HI Institute, Project INSITE Outreach, Utah State University, UMC 10, Logan, UT 84322.

4. **Child visual vs. auditory orientation.** Parents and parent advisors need to observe the child's visual and auditory orientation. Visual orientation frequently indicates a natural inclination for learning and using total communication whereas auditory orientation frequently indicates a propensity for aural-oral communication. Parents and parent advisors should ask these questions as they observe the child's communication orientation. (a) What are the child's auditory communication patterns? Does the child easily attend and orient to sounds? Does the child babble and vocalize freely? (b) What are the child's visual communication patterns? Is the child very visually active? (c) Does the child seem to get more information by attending to a variety of communication signals (synthesizing) or by attending to specific communication signals, such as lip movements (analyzing)? In general, if messages are understood by synthesizing (drawing out the message from many signals) total communication will be easier for the child to use. If messages are understood by analysis (attending to specific signals), aural-oralism may be the easier method to use.

The SKI*HI Model does not recommend specific child auditory performance criteria in order for the child to use aural-oralism or visual orientation criteria in order for the child to use total communication. As the SKI*HI *Communication* Program continues to be administered, parents and parent advisor note the visual and auditory orientations of the child. Does the child babble and vocalize, freely? Is the child very gestural? As the SKI*HI *Auditory* Program is being administered in the home, parents and parent advisor record the auditory progress of the child. Does the child attend and orient easily to sounds? What home sounds can the child hear? What speech sounds can the child hear and use? In obtaining and reviewing this auditory information, it should be remembered that children who have a difficult time hearing differences among words may have a difficult time understanding speech. However, this should be only one of the many factors considered. All of this child information should be carefully and regularly reviewed by parents and parent advisors using the monitoring sheet to be presented in the next lesson. The monitoring sheet should be regularly reviewed at child staffings.

Parent interests and skills. The parent advisor tells the parents that considerations of their interests and skills are also important in making a communication methodology decision. The discussion below will enable parents to explore their interests and become aware of certain skills that may influence their decision to use a specific communication method.

1. **Interest in using total communication:** The parent advisor explains to the parents how they will learn to use total communication in the home. This process is outlined below. Parents should then be given the chance to express how they feel about this process.

A BRIEF DESCRIPTION OF LEARNING TO USE TOTAL COMMUNICATION

A. Family members will learn to sign using a SKI*HI total communication video tape program and/or attending sign language classes. In using a video tape program, family members can slip video cassette tapes into a playback unit and view sign lessons on the family television.

B. As family members are learning signs from the video tapes, they receive lessons on how to use signs consistently and effectively in the home. These lessons cover the following areas:

1. Integrating listening and speech in total communication.
2. Helping the child progress from gestures to baby signing to true signing.
3. Activities to help family members expand their sign vocabularies.
4. Using simplicity, emphasis and reinforcement to help the hearing impaired child learn signs.
5. Learning ways to sign consistently in the home (even when not communicating directly to the hearing impaired child).
6. Suggestions for improving signing effectiveness by using animation, signing affixes, getting the child to watch you sign, involving relatives and friends in total communication, etc.

2. **Interest in using aural-oralism:** The parent advisor explains to the parents the basic skills involved in using an aural-oral approach. These skills are outlined below. Parents need to be given the chance to express how they feel about these skills.

BRIEF DESCRIPTION OF USING AURAL-ORALISM AND TEACHING THE CHILD AURAL-ORAL SKILLS

Using aural-oralism so that the child will acquire aural-oral skills is not simply a matter of speaking to the child. Effort is required to develop the child's listening, speech and speechreading abilities. Some of the aural-oral skills parents will learn involve:

A. Individualized training to develop the child's residual hearing; unisensory training may be used when the speaker covers his or her mouth so the child will rely on listening for speech comprehension.

B. Speech stimulation and training including: (1) using speech sounds the child can most easily perceive; (2) using speech sounds more frequently around the hearing impaired child; (3) reinforcing the child's correct speech sound production; (4) learning how to encourage and maintain the child's speech production.

C. Informal help with speechreading. Since speechreading by itself is very difficult, formal speechreading training is not done. Speechreading by itself is difficult because many speech sounds look alike on the lips (example, p, b, m, look the same on the lips as do k and g). Some speakers barely move their lips when they speak, speak too rapidly, or have facial hair that covers their lips. However, speechreading as a supplement to hearing may be advisable. To help children use speechreading as a supplement to hearing, parents may need to be made aware of such things as facing the child when communicating, occasionally drawing the child's attention to lip clues, speaking naturally (avoiding over-articulation and speech exaggeration), and speaking clearly.

3. **Parent Interaction Styles:** The parent advisor observes parent interaction styles and discusses them with the parent. Some parents are demonstrative. They naturally use gestures, body

expressions, facial animation and other signals when communicating with the hearing impaired child. Other parents tend to be less demonstrative. They prefer to use speech as the primary source of language input to the hearing impaired child. Although parent interaction style is only one consideration of many, parent *comfort* in communication is important. Therefore, interaction styles need to be freely observed and discussed with the parents.

Note: For parent advisors and parents who wish to explore this issue further, visual, auditory and touch communication styles can be determined by using the techniques described on pages 57-59.

4. **Visual perceptual skills:** It is easier for some people to learn signs than others since some people possess certain visual perceptual skills more than others. Some of these visual perceptual skills are: (a) visual discrimination (ability to see the difference among different objects or forms), (b) visual memory (ability to remember visual forms), (c) attention span for objects, forms, or letters (ability to attend to sequences of shapes, letters, etc.), (d) figure-ground discrimination (ability to concentrate on important signals and ignore background visual information), and (e) visual synthesizing or closure (deriving total messages from visual input). It is important that these skills not be overemphasized to parents since research on their importance has not been well documented and since possession of these abilities is only one of many factors which determine the ease of sign language learning. Motivation, attitude towards signing, teaching methods and materials are other important factors.

Note: For parents and parent advisors who wish to explore this issue further, several visual-perceptual tests are available which reveal one's abilities to perform the skills mentioned above. Some of these tests include: (a) Detroit Tests of Learning Aptitude (The Bobbs-Merrill Company, Inc., 4300 West, 62nd Street, Indianapolis, IN 46206), (b) Carrow Test of Auditory-Visual Abilities (Teaching Resources, 50 Pond Park Road, Hingham, MA 02043), (c) Test of Visual-Perceptual Skills (Special Child Publications, P.O. Box 33548, Seattle, WA 98133).

Review Questions For Parents

1. What are some of the things that need to be considered in the decision to use aural-oralism or total communication?
2. What is your interest in learning and using total communication and aural-oralism?
3. How would your interaction styles or visual perceptual skills affect your interest in using total communication or aural-oralism?
4. What are some child characteristics and skills that need to be considered in making a decision to use aural-oralism or total communication?

Sample Challenge

No specific challenges; however, parents will need to begin their observation of child characteristics and skills. Parents should also be encouraged to think about and discuss their interest in learning and using total communication and their interest in using and teaching their child aural-oral skills. They should be encouraged to be aware of and discuss their interaction styles and their ease in the use of visual-perceptual skills.

Information Lesson VIII

Evaluation for Aural-Oralism or Total Communication - 2

Outline/Parent Objectives

I. Parents will remember that there are three important considerations in making a communication method decision.
   A. The first consideration is child characteristics and skills (discussed in last lesson).
   B. The second consideration is parent skills and interests (discussed in last lesson).
   C. The third consideration is probable outcomes of using aural-oralism and total communication in light of parent values.

II. Parents will consider their values in light of the probable outcomes of using different communication methods.
   A. Parents will understand the probable outcomes of the child's use of total communication (such as a predominance of friends who sign, possible participation in community events sponsored by deaf people, and the use of an interpreter) and the probable outcomes of the child's use of aural-oralism (such as predominance of friends who don't sign, attendance at regular community events, attention to the speech of others, possible use of an oral interpreter).
   B. Parents will consider these probable outcomes in light of their values such as feelings about conformity, demonstrativeness, achievement, change, identity and precision.

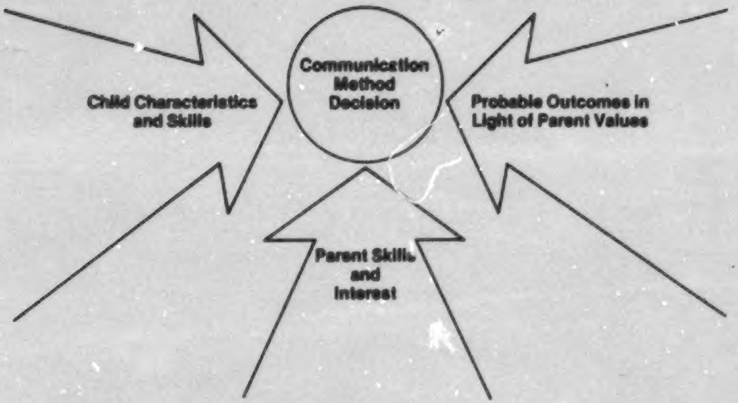
III. Using the "Monitoring Sheet for Communication Method Decision," parents and parent advisor will document and discuss: (a) child characteristics and skills, (b) parent skills and interests, and (c) parent values. This will be done during this home visit and every 1-2 months during the remainder of the Communication Program.

Materials

None

Lesson

Introduction. As discussed in the last lesson, there are three important areas that should be carefully considered in making a decision to use aural-oralism or total communication: (a) child characteristics and skills, (b) parent interests and skills, (c) probable outcomes of using different communication methods considered in light of parent values.


Communication Method Decision
Child Characteristics and Skills
Probable Outcomes in Light of Parent Values
Parent Skills and Interest

Last week we discussed child characteristics and skills and parent interests and skills that need to be considered in making the communication method decision. This week, one more important consideration will be discussed: probable outcomes of using different communication methods considered in light of parent values.

Probable outcomes considered in light of parent values. Parent advisor discusses with parent the probable outcomes of their child using total communication and aural-oralism. These probable outcomes are:

PROBABLE COMMUNICATION METHOD OUTCOMES

Probable Outcomes of Using Total Communication	Probable Outcomes of Using Aural-Oralism
1. Child will probably attend a school for the deaf where students use total communication, or attend a total communication class in a public school.	1. Child will probably attend an oral school for the deaf, or an oral class in a public school, or attend a public school.
2. Child will probably have a predominance of deaf and hearing friends who use sign language.	2. Child will probably have a predominance of deaf and hearing friends who do not sign.
3. Child will be more likely to participate in events sponsored by deaf organizations such as sports and church activities, but may attend regular community events.	3. Child probably will not participate in events for deaf people. Child will be more likely to attend regular community events.
4. Child will probably express himself using a variety of pantomime, gestures and signs to communicate to others.	4. Child will probably be very attentive to the speech and facial expressions of others and will be concerned about his own speech production.

5. When the child becomes an adult, he will probably use an interpreter at community events.	5. When the child becomes an adult, he may require an oral interpreter at community events.

It is suggested parent advisors tell parents that there are no conclusive research findings which prove the superiority of aural-oralism or total communication in promoting child communication skills (language levels, reading skills, speech skills, etc.). Some studies indicate the superiority of aural-oralism while other studies indicate the superiority of total communication in promoting these abilities. Informing parents of this will prevent entanglement in discussions on the communicative superiority of one method over another. Parent advisors should stress to parents that the important thing is not so much the probable outcomes per se, but *parent values considered in light of these probable outcomes.* Parent advisors need to help parents explore their own values in light of the probable outcomes using the guide below.

PARENT VALUES

1. **Feelings about being demonstrative:** Good signers are often demonstrative people. They often surrender themselves (arms, hands, eyes, features) completely to the message. On the other hand, good oral skills often require continuous attention to sound production and acute observation of other people's tiny lip movements. Parent advisors need to explore with parents how they feel about demonstrativeness and attentiveness.

2. **Feelings about conformity:** Parent advisors need to explore with parents how they feel about association with minority groups such as the deaf in the community. How important is conformity to parents? How important is it for the child to be like the parents?

3. **Feelings about achievement:** Parent advisors should determine what kind of importance parents attach to mainstreamed, school-oriented success in relationship to social-interactive success. Are school skills such as grammar and oral communication considered more or less important than social ease that might be acquired by the hearing impaired child's use of a more visual, multi-signal system? How important is it for the parents to have their child achieve in the same ways the parents achieved?

4. **Feelings about change:** Parent advisor should find out how parents feel about change. Do they enjoy a great amount or a minimal amount of challenge, intrusion or change in their lives? For example, using total communication requires a change in how all family members communicate with each other as well as with the hearing impaired child. The use of aural-oralism requires a great deal of time, energy, and patience in understanding the child's utterances and in assisting the child to acquire oral skills. How do parents react to different kinds of change? For example, is the challenge of learning and using signs exciting, depressing, frightening? Is the challenge of devoting time in helping child acquire oral skills exciting, depressing, or frightening?

5. **Feelings about identity:** Parent advisor should determine how the use of a particular communication method might affect what and how parents think of themselves; or how the use of a particular communication method might affect what parents think others think of them. (For example, some parents may or may not prefer to be known as a person who signs.)

6. **Feeling about precision:** Some people are more concerned with general messages or "gists" of messages. Some people are more concerned with precision in messages, with awareness of and use of the detail in messages. Parent advisor should determine how parents feel about *emphasis* on getting overall messages across as is usually the case with total communication vs. *emphasis* on detail and precision (oral pronunciations, etc.).

Monitoring sheet for communication method decision. Parent advisor should discuss with parents the "Monitoring Sheet For Communication Method Decision." A form with examples on it is on pages 303–307 and a blank form is on pages 309–313. During this home visit and every 1 to 2 months hereafter, the 10 questions on the form need to be discussed. The interpretation suggestions given after each question should also be discussed. The form can be kept in the parent notebook where parent advisor can access it to record the data and to periodically discuss the findings and implications with the parents.

Parent advisor should remind parents that this process of making a communication method decision need not be rushed but should, if possible, be made by the time the Home Communication Program is completed. This provides enough time for parents and parent advisor (using the monitoring sheet) to carefully consider all issues discussed in this lesson (and the previous one). In addition, it usually allows enough time for the parent and child to establish communication interaction which is needed before a formal language system can be acquired. After the parents and parent advisor collect sufficient information, they will jointly make the communication method decision. Remember, this decision need not be final. After careful consideration, a later communication method change may be indicated.

Parent advisor should remind parents that during and after this process of making a communication method decision, strong advocates of either or both communication methods may attempt to persuade them of the superiority of one method over another. It is important to remind parents that *no* conclusive, reputable research findings prove the superiority of one system over another. Total communication advocates have research to prove the superiority of their system and the inferiority of aural-oralism, and aural-oralism advocates have research to prove the superiority of their system and the inferiority of total communication. The important thing for parents to realize is they should be the ones to consider what their child needs in light of their child's characteristics and skills ("What does my child need?") and their interests, skills and values as parents ("What do I as a parent need?"). Parents should be encouraged to actively explore these issues (for example, it might be advisable for them to talk to parents of variously aged aural-oral and total communication children, or to attend a play or concert with an interpreter, or to engage in one-to-one contact with deaf adults). But parents should prepare themselves not to be thrown off balance when approached by strong advocates of either communication methodology attempting to lure them to one side or the other.

SAMPLE ENTRIES

Monitoring Sheet for Making Communication Methodology Decision

Discuss following questions and interpretation suggestions with parents every 1-2 months.

Question #1:

Over time, what is the gap between the child's hearing aid age and the child's language age? The hearing aid age is the number of months the child has worn amplification and the language age is the average of the LDS RA and EA in months. To determine, subtract language age from hearing aid age.

example #1

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22	
hearing aid age . . . 12 mo.	. . . 14 mo.	16 mo.	18 mo.	20 mo.	22 mo.	
language age . . . − 6 mo.	. . . − 8 mo.	− 10 mo.	− 10 mo.	− 10 mo.	− 11 mo.	
6 mo.	→ 6 mo.	→ 6 mo.	↗ 8 mo.	↗ 10 mo.	↗ 11 mo.	overall increase

Question #1 Interpretation Suggestion:

In general, the more the numbers increase over time, the more need to strongly consider the use of total communication.

example #2

h.a. age 12 mo.	14 mo.	16 mo.	18 mo.	20 mo.	22 mo.	
lang. age − 24 mo.	− 26 mo.	− 26 mo.	− 26 mo.	− 26 mo.	− 27 mo.	
− 12 mo.	→ − 12 mo.	↗ − 10 mo.	↗ − 8 mo.	↗ − 6 mo.	↗ − 5 mo.	overall increase

Question #2:

What are the child's aided audiometrics (ave. of 500, 1k, 2k) over time?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
70 dB	→ 70 dB	↗ 80 dB	→ 80 dB	↗ 85 dB	↗ 90 dB

Question #2 Interpretation Suggestions:

The more profound the aided loss, the more need to consider the use of total communication. Note especially losses that progressively worsen over time, making speech progressively difficult to hear. The less profound the loss, the more need to consider the use of aural-oralism.

Question #3:

Over time, approximately what percent of all the child's communication attempts are gestural only?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
40 %	↗ 50%	→ 50 %	↗ 75%	→ 75%	↗ 90%

Question #3 Interpretation Suggestions:

Note the most recent per cent of gestural communication attempts used. If the majority of the child's communication attempts are gestural, the use of total communication should be strongly considered. Notice the trend. If the child is using more and more gestures over time, the need for using total communication may be evident. If fewer gestures are used over time, the use of aural-oralism may be evident.

* The parent advisor may want to use arrows to show changes in data. A straight arrow (⟶) indicates no change. An "up" arrow (↗) indicates an increase and a "down" arrow (↘) indicates a decrease.

Question #4:

Over time, approximately what percent of all the child's communication attempts are vocal only?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
30 %	→ 30 %	↗ 40 %	↗ 60 %	→ 60 %	→ 60 %

Question #4 Interpretation Suggestions:

Note the most recent percent of vocal communication attempts used. If the majority of the child's communication attempts are vocal, the use of aural-oralism should be strongly considered. Note the trend. If the child is using more and more vocalizations over time, the need for using aural-oralism may be evident. If fewer vocalizations are used over time, the use of total communication may be evident.

Question #5:

What percent of what other people say requires visual clues (animation, gestures, etc.) in order for the child to understand?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
20 %	↗ 30 %	↘ 20 %	→ 20 %	↘ 10 %	↘ 5 %

Question #5 Interpretation Suggestions:

Notice the most recent percent. If the majority of what other people say requires visual clues for child understanding, total communication should be strongly considered. The trend should be noticed. If more and more visual clues are required for child understanding, an indication for total communication may be evident. If fewer visual clues are required for child understanding, the use of aural-oralism may be evident.

Question #6:

Over time, do parents express more/less interest in learning total communication in relationship to aural-oralism?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
Comments: Parents not interested in T.C.	Comments: Same	Comments: Same	Comments: Same	Comments: Mother talked at length on how she does not want to learn signs.	Comments: Same attitude

Question #6 Interpretation Suggestions:

Note the pattern of parent interest. Are parents increasingly interested in learning and using total communication or in using aural-oralism?

Question #7:

Do parents express more/less concern about the child's exposure to a verbal language system (emphasis on speech and listening) in relationship to the child's exposure to a multi-signal language system (total communication)?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
Comments: Parent eager for child to be oral.	Comments: Same	Comments: Same However, Mom said Dad saw interpreter on T.V. & wondered if child might benefit from T.C.	Comments: Parents seem more interested in child learning T.C.	Comments: Parents open to what's best for child	Comments: Same

BEST COPY AVAILABLE

Question #7 Interpretation Suggestions:

If parents have an increasing desire for the child to be exposed to a verbal language system in relationship to a multi-signal language system (total communication), aural-oralism may be the preferred communication mode. If parents have an increasing desire for the child to be exposed to total communication in relationship to verbal language, total communication may be the preferred mode of communication.

Question #8:

Over time, do parents interact more/less demonstrably (animation/gestures) with the child (includes parent initiated communication and responses to the child)?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
Comments: Parents very animated. Use abundant gestures	Comments: Same	Comments: same	Comments: Increase in use of gestures now that child is responding to them.	Comments: Same	Comments: Same

Question #8 Interpretation Suggestions:

Note the pattern of parent interaction. More and more use of animation and gestures may indicate total communication as a preferred mode of communication. Less use of animation and gestures may indicate aural-oralism as the preferred mode of communication.

Question #9:

Over time, do parents demonstrate more/fewer visual-perceptual skills (such as visual discrimination, visual memory, attention span, figure-ground discrimination, visual closure; see description of skills in Lesson VII of the Home Communication Program).

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
Comments: not observed	Comments: Mother retained few letters from manual alphabet that I demonstrated to her remarkably well.	Comments: Mother seems to be visually alert.	Comments: Mother said she is visually active; notices most of Jason's gestures and facial expressions.	Comments: nothing new	Comments: Same

Question #9 Interpretation Suggestions:

As parents demonstrate more visual-perceptual skills, an increased ease in using total communication may be evident. Parents who do not demonstrate visual-perceptual skills may be more comfortable with an aural-oral approach.

Question #10

Do parents seem more/less concerned about the child's association with other deaf persons who sign?

Date 3/24	Date 5/25	Date 7/23	Date 9/23	Date 11/25	Date 1/22
Comments: Parents not concerned about this.	Comments: Same	Comments: Parents would enjoy interacting with other deaf persons who sign.	Comments: Same	Comments: Same	Comments: Same

Question #10 Interpretation Suggestions:

Less concern with this issue indicates more of an acceptance of total communication use. Increased concern with this issue indicates more of an embracing of aural-oralism.

BEST COPY AVAILAB

Monitoring Sheet for Making Communication Methodology Decision

Discuss following questions and interpretation suggestions with parents every 1-2 months.

Question #1:

Over time, what is the gap between the child's hearing aid age and the child's language age? The hearing aid age is the number of months the child has worn amplification and the language age is the average of the LDS RA and EA in months. To determine, subtract language age from hearing aid age.

Date _______	Date _______	Date _______	Date _______	Date _______	Date _______

Question #1 Interpretation Suggestion:

In general, the more the numbers increase over time, the more need to strongly consider the use of total communication.

Question #2:

What are the child's aided audiometrics (ave. of 500, 1k, 2k) over time?

Date _______	Date _______	Date _______	Date _______	Date _______	Date _______

Question #2 Interpretation Suggestions:

The more profound the aided loss, the more need to consider the use of total communication. Note especially losses that progressively worsen over time, making speech progressively difficult to hear. The less profound the loss, the more need to consider the use of aural-oralism.

Question #3:

Over time, approximately what percent of all the child's communication attempts are gestural only?

Date _______	Date _______	Date _______	Date _______	Date _______	Date _______

Question #3 Interpretation Suggestions:

Note the most recent per cent of gestural communication attempts used. If the majority of the child's communication attempts are gestural, the use of total communication should be strongly considered. Notice the trend. If the child is using more and more gestures over time, the need for using total communication may be evident. If fewer gestures are used over time, the use of aural-oralism may be evident.

Over time, approximately what percent of all the child's communication attempts are vocal only?

Date _______	Date _______	Date _______	Date _______	Date _______	Date _______

Question #4 Interpretation Suggestions:

Note the most recent percent of vocal communication attempts used. If the majority of the child's communication attempts are vocal, the use of aural-oralism should be strongly considered. Note the trend. If the child is using more and more vocalizations over time, the need for using aural-oralism may be evident. If fewer vocalizations are used over time, the use of total communication may be evident.

Question #5:

What percent of what other people say requires visual clues (animation, gestures, etc.) in order for the child to understand?

Date _______	Date _______	Date _______	Date _______	Date _______	Date _______

Question #5 Interpretation Suggestions:

Notice the most recent percent. If the majority of what other people say requires visual clues for child understanding, total communication should be strongly considered. The trend should be noticed. If more and more visual clues are required for child understanding, an indication for total communication may be evident. If fewer visual clues are required for child understanding, the use of aural-oralism may be evident.

Question #6:

Over time, do parents express more/less interest in learning total communication in relationship to aural-oralism?

Date _______ Comments:	Date _______ Comments:	Date _______ Comments:	Date _______ Comments:	Date _______ Comments:	Date _______ Comments:

Question #6 Interpretation Suggestions:

Note the pattern of parent interest. Are parents increasingly interested in learning and using total communication or in using aural-oralism?

Question #7:

Do parents express more/less concern about the child's exposure to a verbal language system (emphasis on speech and listening) in relationship to the child's exposure to a multi-signal language system (total communication)?

Date _______ Comments:	Date _______ Comments:	Date _______ Comments:	Date _______ Comments:	Date _______ Comments:	Date _______ Comments:

Question #7 Interpretation Suggestions:

If parents have an increasing desire for the child to be exposed to a verbal language system in relationship to a multi-signal language system (total communication), aural-oralism may be the preferred communication mode. If parents have an increasing desire for the child to be exposed to total communication in relationship to verbal language, total communication may be the preferred mode of communication.

Question #8:

Over time, do parents interact more/less demonstrably (animation/gestures) with the child (includes parent initiated communication and responses to the child)?

Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:

Question #8 Interpretation Suggestions:

Note the pattern of parent interaction. More and more use of animation and gestures may indicate total communication as a preferred mode of communication. Less use of animation and gestures may indicate aural-oralism as the preferred mode of communication.

Question #9:

Over time, do parents demonstrate more/fewer visual-perceptual skills (such as visual discrimination, visual memory, attention span, figure-ground discrimination, visual closure; see description of skills in Lesson VII of the Home Communication Program).

Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:

Question #9 Interpretation Suggestions:

As parents demonstrate more visual-perceptual skills, an increased ease in using total communication may be evident. Parents who do not demonstrate visual-perceptual skills may be more comfortable with an aural-oral approach.

Question #10

Do parents seem more/less concerned about the child's association with other deaf persons who sign?

Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:	Date ______ Comments:

Question #10 Interpretation Suggestions:

Less concern with this issue indicates more of an acceptance of total communication use. Increased concern with this issue indicates more of an embracing of aural-oralism.

Review Questions for Parents

1. What are some of the probable outcomes of your child using total communication or aural-oralism?

2. How do you feel about these outcomes in light of how you feel about such things as being demonstrative, associating with minority groups, achievement and change?

Sample Challenges

1. Parents should be encouraged to think about and discuss the probable outcomes of using total communication and aural-oralism and their values in light of these outcomes, such as their feelings about demonstrativeness, conformity, achievement, change, identity and precision.

2. Parents and parent advisor should begin their documentation of child skills and parent interests and values by obtaining information for the questions on the "Monitoring Sheet For Communication Method Decision" and then discussing these questions using the interpretation suggestions. This should be done during this home visit and every 1-2 months hereafter until a communication method decision is made. As indicated earlier, this decision should be made by the conclusion of the Communication Program if at all possible.

Information Lesson IX

Parent Communication: Motherese

Outline/Parent Objectives

- I. Parents will understand the features of Motherese.
  - A. Higher pitch
  - B. Exaggerated intonation
  - C. Short, simple sentences
  - D. Repetition
  - E. Special words
  - F. High number of questions
  - G. Talk about "here and now"
  - H. Non-verbal communication signals
  - I. Imitation, expansion and prods
- II. Parents will understand that the features of Motherese get and help maintain a child's attention
- III. Parents will learn that some parents of hearing impaired children may not use Motherese effectively
  - A. Fewer questions may be used; parents may be more directive
  - B. More tension and antagonism may be shown
  - C. Unnatural intonation may be used
  - D. "Speech only" may be used frequently

Materials

None

Lesson

Parents talk to their infants in a way that is different from the way they talk to other adults or older children. This special communication to the infant is called *Motherese*. The term *Motherese* is used since the mother is typically the most important infant caregiver. However, Motherese is also used by other family members, friends, and relatives who talk to the infant.

Motherese has a special purpose. Because it sounds different than adult speech, the infant knows when someone is addressing him. He pays immediate attention to the person using Motherese. His attention to Motherese is maintained since it is novel and interesting.

Following are the features of Motherese that make it interesting to the infant and encourage communication.

1. **Motherese is higher in pitch than adult conversational speech:** Mothers do not consciously adjust their voices so they can talk *higher* to the child. The falsetto seems to be a natural part of a mother's attempt to get and hold the child's attention. You can imagine that a mother would say "Hi there cutie" with higher pitch to her infant than to her husband.

2. **Motherese has exaggerated intonation or melodic pattern of voice:** Many researchers feel that exaggerated intonation is the strongest feature of Motherese. A mother would say "You are a funny one, aren't you?" with considerably different intonation to her infant than to her girlfriend.

3. **Mothers use short, simple sentences when communicating with their infants:** Even though the communication is short and simple, the sentences mothers use are correct. For example, "What's that? Hey what's that? Is that your toe? I've got your toe."

4. **Motherese has few hesitations within sentences or phrases but longer than normal pauses between sentences or phrases:** Mothers do not break up sentences or phrases with pause-fillers such as *well, but, er,* that are frequently used in adult conversation. Instead, mothers talk to the child fluently, although somewhat slowly, using simple phrases or sentences.

For example, the mother might say "Oh, it's all gone. Your milk is all gone." Then the mother will pause, giving the child a chance to take a turn. If there is no response from the child the mother continues with more fluent, simple sentences or phrases: "Yes, I think your milk is all gone. It's all gone."

5. **Motherese involves the use of repetitions:** Mothers frequently repeat words and entire phrases or sentences. For example, a tape recording of a mother talking to her baby follows:

What can you see?
What are you looking at?
What are you looking at?
What are you looking at, hmm?
Hmmmmm?

6. **Mothers use special words when communicating with their infants:** Perhaps the most common "baby-talk" words are the *-ie* words: *doggie, cutie, blankie, lookie, dollie,* etc. Other special baby words may include *choo-choo, peek-a-boo, allwet, and allgone*.

7. **Motherese has a high number of questions:** One study indicated that as many as 50% of all mothers' utterances to infants are questions. Mothers frequently ask their babies "Don't you like that?" "Where is it?" "What do you see?" " Do you want to go?" "What's in there?" "Where's your nose?"

8. **Mothers talk about the "here and now":** They comment about on-going activities hoping that if the child responds, the response will be appropriate to the situation. Mothers seldom talk about objects or events removed from the immediate situation. Motherese reflects what the child is seeing and doing and what the parent is seeing and doing.

9. **Mothers use non-verbal communication signals in Motherese such as gestures, facial expressions and touching:** Motherese includes non-verbal signals. The more these signals are used, the more effective parents will be in getting and holding the child's attention and the easier it will be for the child to learn to communicate. Non-verbal communication is extremely important in communicating with the young child. As a matter of fact, the verbal part of a message has considerably less effect on the listener than the non-verbal.

How the non-verbal clues are used is also very important in communication. Positive, warm non-verbal signals promote communication. If the mother shows love and acceptance in her face, voice, and touch, the child will be eager to communicate. Research indicates that the more warmth and encouragement mothers show their hearing impaired babies, the faster they gain language. Mothers that reflect disappointment and criticism have children with lower language levels.

10. **Mothers use imitation, expansions, and prods:** As a child begins to make some attempts at communication, the mother will imitate and expand what the child says. Imitation is repeating what the child utters. Expansion is providing a mature form of what the child is trying the say. For example, the child says "ba." Mother says "Ba, yes, that's a ball."

Prodding is encouraging the child to finish a sentence. The mother might say, "I see your ________" (pointing to the child's nose). The child would then add "nose."

Motherese with hearing impaired children. Recent research indicates that mothers of deaf babies talk differently to their children than mothers of hearing children. We know that Motherese gets and holds the child's attention and therefore promotes communication development. It is interesting in light of the positive effects of Motherese that mothers of hearing impaired children sometimes do *not* effectively use many of the features of Motherese. Some examples are reported in the results of a few studies which follow:

1. Mothers of hearing impaired children use less questions, ask fewer opinions of the child, give more commands, and agree less with the child.
2. They show more tension and antagonism when communicating with the child, largely reflected in non-verbal signals. They use less verbal praise.
3. These mothers use unnatural intonation patterns. Intonation is present but the up and down patterns of their voices sound unnatural.
4. Even though the children use a lot of gestures and other forms of non-verbal communication, mothers most often use only speech to communicate.

If communication is to be developed in the hearing impaired infant, Motherese needs to be used effectively.

Review Questions For Parents

1. Can you give examples of Motherese you have seen others use?
2. Why do you think some mothers of hearing impaired children use these techniques less?
3. Why are these features important to a young child?

Sample Challenges

None

Reference and Reading List for Parent Advisors

Ferguson, C. A. (1975). Baby talk as a simplified register. *Child Language Development, 9,* 1-27.

Greenstein, J. B., Greenstein, K., McConville, K., & Stellini, L. (1975). Mother-infant communication and language acquisition in deaf children. New York: Lexington School for the Deaf.

Gross, R. (1970). Language used by mothers of deaf children. *American Annals of the Deaf, 115,* 93-96.

Kretschmer, R. R., & Kretschmer, L. W. (1978). *Language development and intervention with the hearing impaired.* Baltimore: University Park Press.

Mehrabian, A. (1968), Communication without words. *Psychology Today,* Sept., pp. 53-55.

Moerk, E. (1974). Changes in verbal child-mother interactions with increasing language skills of the child. *Journal of Psycholinguistic Research, 3,* 101-106.

Moerk, E. (1975). Verbal interaction between children and their mothers during the preschool years. *Developmental Psychology, 11,* 788-794.

Phillips, J. (1973). Syntax and vocabulary of mother's speech to young children: Age and sex comparisons. *Child Development, 44,* 128-185.

Remick, R. (1975). Maternal speech to children during language acquisition. In W. von Raffler, (Ed), *Baby talk and infant speech.* Lisse: Swets and Zietlinger.

Sachs, J., Brown, R., & Salerno, R. (1972). Adults' speech to children. In W. von Raffler-Engle, Y. Lebrun (Eds.), *Baby talk and infant speech.* Lisse: Swets and Zeitlinger.

Snow, C. (1976). The development of conversation between mothers and babies. *Journal of Child Language, 4,* 1-22.

Information Lesson X

Parent Communication: Interaction and Conversation

Outline/Parent Objectives

I. Parents will understand the meanings of interaction, conversation, turn-taking, and chaining
    A. *Interaction:* an event in which two persons are behaving in ways directed to each other
    B. *Conversation:* an event in which two person exchange messages
    C. *Turn-taking:* a skill in which one person acts or communicates, stops and waits for the other person to act or communicate
    D. *Chaining:* a response to another person that maintains the conversation

II. Parents will understand that language emerges from real-life interactions and conversations, and that the child needs to initiate and respond to these conversations in order to benefit from them

Lesson

Note: Now that parent-infant communication lessons have been resumed, it may be well to review the previous lessons on this topic with the parents (lessons I-V). This review is on page 323 under "Notes/Supplemental Information."

Studies show that *what* a child talks about emerges from the pre-speech *conversations* that existed in the earliest parent-child experiences. Conversation, first non-verbal then verbal or signed, is the natural and essential mechanism to develop communication. Language develops best when it emerges naturally, out of necessity, in real life conversations and interactions.

One problem parents and teachers have is that they communicate as though they were intentionally trying to teach. "What's that?", "Point to your nose", and "Tell the lady your name" are common examples of sincere concern for better language and communication, but have none of the natural and enjoyable give-and-take qualities that are necessary for either communication or language to develop. Just because a child can point out body parts or colors does not mean that he has the conversational skills to share his knowledge with others. It is important that the child be helped to have give-and-take interactions with others so he will have the motivation and skills to start and maintain conversations when he learns the words and meanings.

The following are descriptions of interaction, conversation, turn taking, and chaining and what makes them effective for language learning.

An *interaction* is an event in which two persons are behaving in ways directed to each other; for example, rolling a ball back and forth, exchanging funny faces, or playing pat-a-cake.

A *conversation* is an event in which two persons exchange messages; for example, exchanging words and vocal sounds while putting on a bandaid. One can converse in gestures, sounds, words or sign; it need not be words or signs only.

Turn-taking is a skill that is basic to both interactions and conversations. Turn-taking involves one person acting or communicating, then stopping and waiting for the other person to act or communicate. The general rule is "my turn—your turn—my turn." In turn-taking, the child learns he must "give to get." It is a powerful tool in setting up the essential interaction for socially useful language. But, turn-taking can be dull and not much help for language unless it is chained into longer interactions or conversations.

Thus, *chaining* is what keeps the child involved in longer and longer interactions and conversations. A *chain* is a response to another person that also maintains the interaction. For example:

Chaining (right)	Dead-ended (wrong)
C. "What's that?"	C. "What's that?"
P. "What *is* that?" (hand on chin)	P. "That's a bee."
C. "Dunno" shrug or just looks at parent	C. "Oh", looking at the bee
P. "A bee?"	
C. "Bee"	
P. "It buzzes-bzzzzzzz" with gestures	
C. Vocalizes	

The parent can *chain*, by not only using words or signs, but through vocalizations, gestures, facial expressions or anything that will encourage the child to take another turn. The child also may *converse* non-verbally, so one must be alert to non-verbal turns by the child. For example, if a non-verbal child rolls a ball to his brother and the brother puts his hand out and puts on his "What do you want?" face, the brother is chaining the child. The brother is signaling to the child to indicate a desire for the ball, thus keeping the interaction going.

Hearing impaired children have limited conversational skills that need to be developed to meet their needs to be functional communicators. If a child seldom initiates and maintains conversations, he will actually be excluding himself from many necessary social exchanges and in a way telling others not to contact him. This is why adults often behave toward language delayed children as though they do not expect the child to communicate.

Unless a child knows how and wants to communicate by both initiating conversations and interactions and by responding to others, he will miss many potential social contacts necessary to learn and practice language.

Review Questions For Parents

1. Can you give examples of interaction, conversation and turn-taking?
2. How might you chain to extend a conversation?
3. Can you converse or interact without turn-taking or chaining?
4. Why are conversations the natural means for language learning?

Sample Challenges

1. Be prepared next time to describe *interactions* you had with your hearing impaired child.

2. Be prepared next time to describe *conversations* in which you actually exchanged messages with your child.

3. During the week, observe opportunities for *turn-taking* and describe them to me next time. Also describe examples of *chaining* you see in others.

Notes/Supplemental Information: Review of Parent-Infant Communication

The previous lessons have discussed important things that occur as the infant learns to communicate. The infant learns about objects and events in his environment. He learns that they are meaningful and that they have labels. The infant learns that certain signals have meaning and that he too can make these signals for communication.

The child learns how to interact with people around him. He is not a sponge that absorbs language but an active participant in two-way interaction with his parents. What and how the infant communicates to his parents affects what and how the parents communicate to the infant. It is a back and forth interactive process, not a one-way monologue by the parents.

There are also reasons *why* an infant communicates. Communicating for a variety of reasons increases the child's opportunities for language growth. *How* the child communicates can be achieved in a variety of non-verbal ways and parent responses to the child let him know that his behaviors send messages. Finally, the lessons discussed an effective communicative technique that parents may use to increase a young child's attention to them. That technique is the use of *Motherese*.

Reference and Reading List For Parent Advisors

McClowry, D. P., Guilford, A. M., & Richardson, S. O. (Eds.). (1982). Infant communication development, assessment and interaction. In J. D. McDonald, *Communication strategies for language intervention*. New York: Grune & Stratton.

McDonald, J. D., & Gillette, Y. (1982). *A conversational approach to language delay: Problems and solutions*. Ohio State University: The Nisonger Center and Communications Department.

Information Lesson XI

Parent Communication: Reinforcement

Outline/Parent Objectives

I. Parents will understand that infant communication needs to be increased and encouraged
   A. Parents need to consistently reinforce the child
   B. Parents need to promptly reinforce the child

II. Parents will be able to describe responses that are particularly reinforcing to infants
   A. Conversing with Motherese techniques
   B. Responding to a child's random actions and sounds
   C. Imitating sounds, actions, and body language
   D. Interacting in turn-taking style

Materials

None

Lesson

Reinforcement, in the context of language development, is rewarding the child for his communication attempts. If the child makes an attempt to communicate and is consistently reinforced, the child is more likely to communicate again.

The importance of reinforcing the child's communication attempts can be seen in the vocal communication studies explained below:

An experimenter wanted to determine if babies would vocalize more if they were reinforced. Adults were instructed to stand by the babies but to do absolutely nothing when the babies vocalized. The number of times the babies vocalized was recorded. Then the adults were instructed to smile, say three "tsk" sounds, and touch the babies lightly on their abdomens after they vocalized. The number of infant vocalizations was again recorded. Finally, the adults were instructed to again say nothing after the infants vocalized and the number of these vocalizations was recorded. The results of these three trials indicated a great increase in number of infant vocalizations when the adults used smiles, sound, and touch. When the adults went back to the use of no reinforcement, the infant vocalizations dropped drastically.

Infants who are developmentally delayed can be taught to increase their vocalizations by use of reinforcement. Food, rewards, smiles, and praises such as "good boy," and imitations are commonly used. Even severely delayed children will increase their number of vocalizations if they are given reinforcement. Mothers who look at and vocalize with their babies as they care for them have been found to be very strong sources of reinforcement. Even if the mother only looks at the baby after the baby vocalizes, the number of vocalizations will increase. Looking and vocalizing together, however, provides much stronger reinforcement.

The number of infant vocalizations is affected not only by reinforcement itself, but also by the promptness of the reinforcement. In an effort to determine how quickly adults must reinforce the child's communication attempts, several children were reinforced 0 seconds, 3 seconds, and 6 seconds after they vocalized. The children that were given praise immediately after they vocalized (0 seconds) had the greatest increase in number of vocalizations. The immediate reinforcement was necessary for the increase in number of vocalizations.

From these and other studies it can be assumed that all infant communication can be encouraged and increased by *prompt reinforcement*. The following responses are especially reinforcing to an infant's communication.

1. interacting with the child using Motherese techniques.
2. Responding to a child's random actions and sounds to show him they have an effect on others.
3. Imitating a child's actions, body language, and sounds, and adding other sounds and actions.
4. Interacting with the child in a turn-taking style.

Language is learned best in an environment in which the child initiates communication as well as responds to it. Appropriate reinforcement creates an interactive setting wherein a child not only *wants* to communicate but also can practice how to do it effectively.

Review Questions For Parents

1. How does reinforcement encourage communication?
2. Why is it important to respond quickly to an infant's vocalizations?
3. What are some ways you can reinforce your child's communication intents?

Sample Challenges

1. Observe your child's random actions or sounds and treat them as if he intended to communicate with you. For example, respond to his smiles with smiles and laughter, or when he reaches out, put something in his hand.
2. Imitate your child's vocalizing and add an action or gesture.

Reference and Reading List for Parent Advisors

Bateson, M. C. (1975). Mother-infant exchanges: The epigenesis of conversational interaction, In D. Aaronson and R.W Rieber (Eds.), *Developmental Psycholinguistics and Communication Disorders*. New York: New York Academy of Sciences.

Bruner, R. (1975). The ontogenesis of speech acts. *Journal of Child Language, 2,* 1-20.

McDonald, J. D. & Gillette, Y. (1982). *A conversational approach to language delay: Problems and solutions*. Ohio State University: The Nisonger Center and Communication Department.

Rheingold, H. L., Gewirtz, J. L. & Ross, H. Q. (1959). Social conditioning of vocalizations in the infant. *Journal of Comparative Physiological Psychology*. 65-72.

Ramey, C. T., & Ourth, L. L. (1969). Effects of delayed reinforcement on infant's vocalization rates. *Paper presented at Society for Research in Child Development*. March 1969, Santa Monica, California.

Routh, D. K. (1969). Conditioning of vocal response differentiation in infants. *Developmental Psychology*, *1*, 9-226.

Sacks, H., Schegloff, E., & Jefferson, G. (1974). A simplest systematics for the organization of turn-taking for conversation. *Lang.*, 50, 696-735.

Wahler, R. G., (1969). Infant social development: Some experimental analyses of an infant-mother interaction during the first year of life. *Journal of Exceptional Child Psychology*, *7*, 101-103.

Wiegerink, R., Harris, C., & Simeonsson, R. Social stimulation of vocalizations in delayed infants: Familiar and novel agent. *Child Development*, *45*, 866-872.

Information Lesson XII

Communication Through Experience Pictures

Outline/Parent Objectives

- I. Parents will understand the value of drawings and pictures in the development of communication
  - A. Many times hearing impaired children are visually keen and observant, and pictures help their understanding
  - B. Pictures clarify communication experiences
  - C. Pictures make communication more meaningful
  - D. Pictures encourage conversation and useful language
  - E. Pictures allow learning language in a relaxed setting
- II. Parents will understand the three steps involved in making an experience page
  - A. Make simple drawings related to specific situations
  - B. Write a brief narrative, speaking as you write
  - C. Re-read the page to the child to initiate spontaneous conversation
- III. Parents will understand five situations for which drawings can be useful
  - A. Remembering special events and emotions
  - B. Taking advantage of the child's curiosity
  - C. Preparing in advance for changes in the child's life
  - D. Anticipating future events
  - E. Developing social skills and "civilized" behavior

Materials

1. Paper
2. Pen or pencil

Lesson

"One picture is worth a thousand words" (Chinese Proverb). Most hearing impaired children are of necessity visually keen and observant. They depend on their eyes to compensate for what their ears cannot do. Parents need to take advantage of this strength by using pictures to aid in communication to make experiences more meaningful for the child, to encourage conversations with their child, and ultimately to help their child develop more useful language.

A book about the child is highly motivating for him. The child's experience book will elicit more language from the child than anything else. It also gives the parent a chance to reinforce a language experience that does not reoccur frequently. For example, if a picture is put in the experience book that was taken at a time when the child was hurt, then the parent does not have to wait until the child hurts himself again to reinforce language about that event. Experience books are one of the few ways parents have of reliving past events with young hearing impaired children. Another valuable asset of the experience book is that it allows the parent to reinforce important language in a quiet, relaxed situation with auditory input not possible during the actual event. For example, the experience book is perhaps the best way to reinforce language associated with bathtime or swimming since the hearing aids are not worn during these activities.

As soon as the child begins showing interest in books and pictures, parents can begin using pictures to describe the child's experiences. Simple drawings are the most effective since they can be used on-the-spot when interest is high. Artistic ability is not important. Stick figures will do nicely. What is important is how parents use the drawings. The child is often a frustrated person whose knowledge is way ahead of his ability to share it. He will soon recognize that parents are trying to communicate something and help him express himself.

An experience book is basically simple drawings or pictures of a child's own experiences compiled into book form. From drawings, a child's personal experiences can be relived over and over and his language competency grows in the process. It is *his* book; protected by clear contact paper and strengthened by cardboard so it can be read and reread.

This is all parents need do in three steps:

1. Make simple drawings related to specific situations.
2. Write a brief narrative, reading aloud while writing.
3. Reread the page or book through spontaneous conversations.

The following are some of the kinds of situations in which pictures or drawings can be useful:

1. **Remembering special events:** Almost anything a child enjoys or feels can be an experience page: Halloween, going to McDonalds, making his own sandwich, feeling sad in the hospital, or being angry at a brother. Pictures are a good way to talk about emotions that are difficult to explain at the time they are happening.

2. **Taking advantage of your child's interest:** A child's natural curiosity is constantly motivating him to explore and learn. If parents observe what the child is doing, they will never lack for opportunities and ideas for reinforcing his experiences with pictures.

3. **Preparing in advance for changes in a child's life:** Changes may enter a child's life which he does not understand, such as not going to school on Saturday or moving to a new house. It is not always possible to explain *why* something will happen, but pictures can explain *what* is going to happen.

4. **Anticipating future events:** Hearing impaired children are often left out of the fun of anticipating something special or pleasant. They also have limited knowledge of the concept of *future* or *past*. Advance drawings or photographs of a friend's arrival or places you go in the car help increase understanding and provide the enjoyment of looking forward to an event.

5. **Developing social skills and "civilized" behavior:** This use is one parents will repeatedly appreciate. Pictures help explain such social behaviors as "Eat your dinner first, then you can have

your dessert." Drawings can show the frustration and tears, conflicts, smiles, and finally growth as the child has many social experiences. These are the pictures the child will enjoy "reading" over and over and the ones he will learn from the most.

Teaching Strategies.

1. **Age Considerations:** For younger children (under 2 years of age), use photographs and realistic items. Illustrations need to be very concrete. For older children, drawings can be used. For children from 14 to 20 months, use a liberal mix of photographs and drawings on the same page.

2. **Suggestions for Making Simple Drawings More Meaningful:** Have the mother draw while the child is watching, emphasizing a few important details, like colors, shapes, sizes or relationships. Put the experience in the book as soon after the event as possible.

Establish a few simple techniques for making sure the child understands that parents are drawing *him*.

a. Draw the child's face while looking at him, relating each feature with the real thing as it is drawn on the page.
b. Draw his face from a photograph that he recognizes as himself.
c. Sketch in hearing aids; he will usually identify with that immediately.
d. Involve the child in the production of his own book as much as possible.
e. Allow the child to collect and save a few small things from his activities to put into the experience book (popped balloon, popscicle sticks, leaves, small rocks, post cards, popcorn for feeding the birds). Give the child a small sack or baggie or box. After the first time, the child will collect with enthusiasm and know exactly what his container is for. In time, the child will learn that (a) He can only collect small things that will fit in the container; (b) there are some things that won't fit in the container; (c) There are certain items that won't stay glued in the experience book.

For some items, you can glue a small envelope at the top of the page. The items can be removed, discussed, placed at appropriate spots of the drawn picture, then replaced in the envelope.

3. **Suggestions for Motivating Parents:**

a. Relate personal experiences that other families in the parent advisor's caseload have had using experience books.
b. Use the book in some of your language activities either as a parent-directed activity or after a language activity; plan to put the experience quickly into the book to show the parents how easily but effectively it can be done.
c. Many parents will not start the book on their own. Ask about the book. If nothing happens after two weeks, plan to include it in a lesson in some way. This is very important!
d. Include the book in activities for the auditory stages of gross environmental and gross vocal discrimination.
e. Many parents are self-conscious about drawing. For parents that are, suggest that they sketch the experience in pencil with the child as soon after the event as possible, then later

improve the drawing and finish it up in ink and colors. You can model this very easily. The parent will be surprised at how delighted children are with even the simplest drawing.

f. If pictures of the activity have been taken, they can be added later to reinforce and augment the drawings. Too many times the pictures are developed and returned long after the activity.

4. **Suggestions for Motivating Children:** Because of their behavior or their hearing loss, some younger children will not stay on one page long enough for the mother to reinforce any language. These children need special techniques to get them involved with the book.

a. Use simple pages with large objects, a few bright colors, and large expressive features on faces. Avoid too many items on a page. With only one item on a page the mother has a little time to get some meaningful language in before the page is turned.

b. Try pages that encourage some involvement from the child such as: (a) pages with flaps with items underneath (example: put family pictures under flaps), (b) pages with small items and velcro that can be put on or taken off (example: draw an outline of the child and then use cut paper or felt clothes that can be taken off.

c. Use the tape recorder in combination with the book. Use recorded voices that match the pictures or recorded sounds to match drawings of the source.

d. Use reality items or items that can actually be touched, smelled or manipulated. For example, the clothes on a drawing of a child could be cut from cloth and glued on; some of the animals for gross vocal stimulation could have a bit of fake fur glued on.

e. To make experience book entries, choose times carefully. Try to take advantage of times when parents have the child's attention such as when the child is eating in the high chair, or lying down with his bottle. Mother may have to arrange positioning when using the book to give the child more eye contact and visual clues.

Review Questions For Parents

1. What are some benefits that can result from your using drawings and pictures with your child? Why?

2. What are the simple steps in using drawings to clarify your child's experience?

3. What are some of the situations you have already explained to your child through pictures? What experiences would you like to try?

Sample Challenges

1. Choose possible opportunities for drawings during the week.

2. Each day during the week, make one drawing following the three steps: (a) draw picture, (b) write and speak narrative, (c) reread through conversations.

3. Draw a picture(s) for each of the kinds of situations listed in the lesson.

4. Insert polaroid snap shots in your experience book as well as drawings.

5. Make a "telephone book" which is a book of pictures of familiar persons who often phone. Keep by the phone and show child who is calling.

6. Make a book of "Places I Often Visit" (supermarket, convenience stores, church, school, grandparents, friends' homes, sitters, etc.) Keep in the car to discuss before and after each visit. Match picture to actual place as you arrive.

7. Encourage on-going drawings as you move to other lessons by: (a) having spouse or older siblings make drawings, (b) choosing different situations each week, (c) specifying one or two drawings to be made each week, (d) making a book on a new topic (keep cardboard, paper and contact paper handy), and (e) observing child's progress by writing dates and comments on pictures.

Reference and Reading List for Parent Advisors

Kiely, A. (1975). Lend me your ears... or at least draw me a picture. *Volta Review*, October, 1975.

Morgan, S. (1982). *Using an experience book*. Logan, UT: SKI*HI Institute.

Schwartzberg, J. G. (1975). Parent effectiveness: Helping your child achieve better language at home, *Volta Review*, October, 1975.

COMMUNICATION SKILL LESSONS

The following skill lessons are categorized into three areas.

1. Establishing an Effective Communication Setting.
2. Establishing Effective Non-Verbal Communication.
3. Establishing Effective Verbal Communication.

Establishing an Effective Communicative Setting

Skill Lesson 1

Minimizing Background Noise

Outline/Parent Objectives

I. Parents will explain the three conditions for the best listening environment for a hearing impaired child.
  A. Be as close to the child as possible when speaking to him.
  B. Use a normal conversational tone of voice.
  C. Minimize background noise while speaking to him.

II. Parents will demonstrate their use of these three skills.

Child Objectives

Child will be less distracted by noise and be better able to use his hearing for important communication signals.

Materials

1. Slide/tape "Sound Approach" (optional)

Lesson

There are three factors which can cause the hearing impaired child to become distracted: too great a distance from the speaker, a speaker's voice that is too loud or soft, and background noises. For the best communicative and listening environment one should:

1. Be as close as possible to the child when speaking to him.
2. Use a normal conversational tone of voice.
3. Keep background noise at a minimum when communicating with the child, i.e. radios, appliances and T.V.

Distracting and competing noises make it difficult to hear conversations clearly. All surrounding noises, as well as speech sounds, are equally amplified with a hearing aid; thus important communication and speech signals may be lost in background noise. When it is impossible to eliminate background noises completely, speaking close to the child makes the speech signal stronger and clearer.

Teaching strategy. Show slide presentation "Sound Approach" and discuss its implications.

Review Questions For Parents

1. How do background noises interfere with communication?
2. Why do background noises cause special problems for the hearing impaired child?

Sample Challenges

1. Make a list of background noises occurring during the home visit, during a normal day, in the car, at the store, etc.

2. Work to reduce noise; discuss examples at next home visit.

3. Listen to competing background noises with your child's hearing aid on to determine the distraction effects of such noises.

4. Blindfold yourself and listen to distracting sounds. Discuss how to eliminate them.

Skill Lesson 2

Encourage Child To Explore And Play

Outline/Parent Objectives

I. Parents will explain that exploration and play are basic learning tools for a young child

II. Parents will explain that a child learns by experiencing his environment through various modalities
   - A. Hearing
   - B. Seeing
   - C. Touching and feeling
   - D. Tasting and smelling
   - E. Motion

III. Parents will explain that giving their child attention for appropriate play and exploration encourages learning

IV. Parents will attempt to provide a safer, more stimulating home environment for learning

Child Objectives

Child will have safer, more meaningful opportunities to learn about his environment and organize his world.

Materials

Optional available resources:

1. "A Home Arranged For Learning" and "Learning Through Involvement In The Home" available from Utah State University Extension, Utah State University, Logan, UT 84322.

2. White, B. L. (1978) *The First Three Years.* Avon Books.

Lesson

Discussion. "Exploratory behavior, whether it be visual exploration of objects in the environment, or handling and mouthing of anything in reach, or creeping, crawling and walking to new objects, is basic to the infant and young child. It is through this experience, initiated by his acts and our responses to them that he begins to organize his world" (Ira J. Gordon (1975), *The Infant Experience,* page 51). Play is learning, one of the most effective ways of learning. So a child's environment and experiences contribute to the development of his abilities and intelligence.

Parents should allow the child freedom to explore and play rather than keep him confined to a playpen or infant seat. A child must have the chance to explore objects and learn what they are for if he is to understand the names of the objects. Help parents childproof and safetyproof the home. Leave safe, interesting items in places accessible to the child for easy exploration. It is fun for him to have old magazines, plastic containers with lids, and pans with lids in low cabinets or drawers.

Provide safe objects for the child to climb in or onto. Show him how he can use his senses to explore the objects around him and give him attention for playing meaningfully.

Hearing. Talk to the child about what he is doing and what others are doing. This helps him associate words with his environment. Point out sounds around him. (Note: This is more fully discussed in the Auditory Program.)

Seeing. Show the child what you are doing. Put him up on a chair or counter, or bring the items down to his level. Point out interesting things inside and outside the home.

Touching. Give the child plenty of opportunity to touch and feel (examples: grass, rocks, mud, puddles, water, soft and rough fabrics, hair and facial features, food, wind, warm and cold).

Tasting and smelling. Let the child use taste and smell to explore. Some children stay at the mouthing level of exploration; they can be helped to further develop taste and smell by providing them with a variety of objects and ways to explore them.

Motion. All children love and need motion. Show the child how you shake, move, push and pull objects, as well as throw them. Provide an area where he can walk, run, jump, and move freely without endangering himself or others.

When the child is playing appropriately, stop a minute to watch him and smile or voice approval. Too often attention is given to unwanted behavior while appropriate behavior is ignored.

Teaching strategies. Parent advisors can teach parents how to promote the child's exploration and play by implementing some of the following suggestions:

1. Parent and parent advisor can discuss ways to make the home more interesting, safe, and accessible.
2. Parent and parent advisor can investigate resources for additional information in the home or library.
3. Parent advisor can refer to *Developing Cognition in Young Hearing Impaired Children* (available from SKI*HI Institute): (a) Appendix 2: Goal Directed Play Activities, (b) Appendix 3: Goal Directed Play Activities-Naming, (c) Appendix 4: Symbolic (Pretend) Play Activities, (d) Appendix 5: Suggested Readings and Activities.

Review Questions For Parents

1. Why are play and exploration important to a child's development?
2. Where can you find more information about your child's development and how he learns? Note: There is a section on child development materials in the SKI*HI Monograph "Material Listing For Professionals and Parents of Young Hearing Impaired Children," available from the SKI*HI Institute.

3. How can parents make their home a safe, interesting environment?
4. Discuss the importance of the five senses and motion to a child's play experience.
5. Why should parents give attention to their child when he plays appropriately?

Sample Challenges

1. "Child-proof" your home for your child's safe and interesting play. Walk around your home and make two lists: *Accessible and Interesting Things to Do* and *Unsafe Items and Situations*.

2. Investigate and observe what your child enjoys doing. How can you increase or improve opportunities for your child to have enjoyable experiences in your home?

3. Describe experiences that are appropriate to your child's age.

4. List the five senses and provide an experience for your child in each area. Discuss at next home visit.

5. Choose child's favorite toys or play activity and show how they can be made more valuable by using each of the senses and motion.

6. Keep track of how often and when you attend to your child's appropriate play. Increase your reinforcement of his appropriate play.

Skill Lesson 3
Serve As A Communication Consultant

Outline/Parent Objectives

I. Parents will explain that it is important for their child to be near them as he plays and explores.
    A. The child will develop best through interactions with people and his environment
    B. Mutual sharing encourages child communication.
    C. The child will develop competency in learning new skills in an atmosphere of warmth and encouragement.

II. Parents will demonstrate being a communication consultant.
    A. Parents will communicate with their child as he plays and explores.
    B. Parents will encourage the child as he learns new skills and as he experiences joys and frustrations.

Child Objectives

1. Child will enjoy learning and sharing with others.
2. Child will interact and communicate with others.
3. Child will begin developing a secure and loving relationship with his parents and a feeling of self-worth.

Materials

None

Lesson

A child develops as he associates and interacts with his parents and his environment. He is a social creature and learns from mutual sharing of his experiences, skills, joys, and frustrations. So, the child needs to be placed close to his parents for his play and exploration while parents perform their daily activities.

The child should be placed close enough so that parents can stop to explain and describe things and to occasionally call things out to him as he moves from one item of interest to another. Communication should be spontaneous and appropriate to the situation. Parents should remember to neither fuss over the child so much that his play is hindered nor intrude so much that they take over his learning and fun. Parents should help develop the child's competence in learning new skills in an atmosphere of warmth and sensitivity. They need to help the child see the limits of his exploration as well as the expectations. They need to act as *communication consultants*. If there are times parents are too busy to respond to the child, that is O.K.; that's an important lesson for a child to learn too.

Consider this summary of an article that appeared in *Today's Health*, February, 1974:

A study was conducted at Harvard University to determine what makes mothers of socially and educationally successful children different from mothers of unsuccessful children. Four hundred families were included in the study. Children were rated on social behaviors and educational skills including language abilities. On the basis of this, the children were categorized as *A*, *B*, or *C*. *A* children were very competent. *C* children were those who scored lowest on various educational and social parameters.

A team of researchers then went into the homes of the mothers of the *A* and *C* children. The *B* mothers were excluded so the contrast in the *A* and C mothers would be more obvious. The homes were visited one day a week for six months. The researchers found that marital status, income, education or family size did not make the difference between *A* and C mothers. However, the researchers did note some important differences in *A* and C mothers.

1. *A* mothers enjoyed relating to their children. The children were allowed to explore their environments while the mothers were close by explaining things to the child. Often the mother would pause in her work, go to the child, and talk about what he was doing. Children were often seen following their mothers about, casually communicating about objects and events in the home.

2. Mothers of *A* children were not worried by the children when they began to assert themselves and say "no." Mother would redirect the attention of the child or comply with the "no."

3. Mothers of C children were worried about clutter. Their homes were often very neat and clean. Children were kept at distances in playpens and infant seats. The children were exposed to a lot of TV since the mothers thought this would provide good language stimulation. Mothers spent a few minutes each day *teaching* the children specific skills. However, they did not engage in a lot of spontaneous, on-going communication with the children.

4. Mothers of C children worried about the children becoming brattish when they began to say "no." Mothers snuffed out the "no" behavior with discipline.

Teaching strategies.

1. Parent and parent advisor should discuss ways and opportunities to be *communication consultants*. Describe and make a list for future reference.

2. Parent advisor should help parents consider how they can implement the qualities of an *A* parent.

Review Questions For Parents

1. Why are children from the *A* group successful socially and educationally?
2. What is your idea of a "communication consultant?" Describe.

Sample Challenge

1. Chart the opportunities to be a *communication consultant* during a specific time period, such as a day, morning, afternoon, or evening. The goal is to be aware of opportunities to interact with your child. After becoming aware of these opportunities, suggest things you could do or say to make them more meaningful or interesting.

Skill Lesson 4

Use Interactive Turn-taking

Outline/Parent Objectives

I. Parents will explain that interaction is two persons sharing an experience and that interaction is essential to generate communication and language

II. Parents will demonstrate interacting with their child frequently and for varied social reasons:
   A. To share feelings
   B. To greet him
   C. To help him
   D. To share his play
   E. To ask him to join an activity

III. Parents will select experiences that naturally encourage interactive turn-taking

IV. Parents will take turns with the child in home activities

V. Parents will use strategies to encourage turn-taking
   A. Waiting for the child's turn
   B. Prompting or signaling the child's turn
   C. Expecting a response from the child
   D. Imitating the child's actions, gestures, vocalizations
   E. Changing strategies to keep child's interest alive

Child Objectives

1. Child will have a reciprocal system in which he can communicate messages.

2. Child will be encouraged to communicate because of parents' responsiveness and interest in him.

3. Child will observe many reasons to interact and communicate.

Materials

None

Lesson

A child learns about his world through play and exploring and learns to communicate through social contacts with the special people in his life. Parents don't have to wait for social contacts to "just happen." They can provide situations for them to happen often. Interaction (two persons sharing an experience) is the essential way to generate communication.

A hearing child interacts before he communicates. It is important to also expect a hearing impaired child to interact with others before he communicates. The attitude of expectation is essential! Teach the child how to interact by interacting frequently with him and for many reasons, i.e., to share feelings, to greet him, to help him, to share his play or to have him share the activity, rather than merely to discipline, to meet his physical needs, or to nurture. View these interactions or contacts as potential language opportunities.

It is important for interactions to be equally shared, neither parent nor child dominating the activity. Frequently, the child is *talked at* or *done for* without really being allowed to participate. Or, the child is directed or commanded to follow the parents unconditionally. Sharing the balance of power in an interaction or conversation offers more opportunity for learning.

Turn-taking means that parent and child take equal turns. For example, the parent stacks a block and the child stacks a block; or a parent makes a funny face and the child makes one back, and so on. It is the two-way "I model and you do" practice that is the basis of communication. It makes the child feel he is an important part of everything that he does with his parents.

Teaching strategies

1. Structure activities for *give and take*, e.g., rolling a ball, making a pile of hands one at a time, putting toys or objects in a box, taking clothes from a dryer, imitating gestures or faces.

2. Wait for the child to take a turn. Let the child see by facial expression and attitude that he is expected to do something. Wait with anticipation. Give him a chance for his turn. Try counting to ten before reentering the interaction.

3. Signal the child to take a turn. A signal can be anything as long as it encourages the child to take a turn. Point to the block he is expected to stack. Have parents hold out their arms if they want their child to throw the ball. Remember to wait to see if the child will respond to the signal.

4. Physically prompt turns if necessary. If the child doesn't take a turn even after waiting and counting to 10, do the turn with him. Have parents put their hands over his and throw the ball or stack the block. Have them smile, clap and let him know they are happy he took his turn.

5. Change strategies if the interaction is unsuccessful. A change in strategy can be anything as long as it encourages the child to interact, such as (a) adding another person to the game, (b) clapping after every turn, (c) making funny noises when taking a turn, (d) doing the activity in front of a mirror, (e) moving the activity from the table to the floor or vice versa, (f) playing the activity in a lively way alone or with another person to see if he will get interested again, (g) having the parents put down their heads until the child returns and then try again.

6. Interact with expectation of responses. Show that a response is expected by using happy, hopeful expressions.

7. Imitate the child. One way to teach a child to "do as I do" is to do as *he* does.

8. Share the choice of activities. Sometimes follow the child's lead, other times lead him. Share choices of activities so the child can learn how to share. Don't be a follower; don't be a dictator; instead be a real partner.

9. Think as a child. Be in the child's world and follow his lead. Piaget (1952) concluded that a child's actions are his knowledge, and that language comes from these actions. Act in ways the child can perceive, understand and enjoy.

10. Use natural home activities that are likely to include interaction, such as: (a) child helping to stir and pour while cooking, (b) washing dishes, (c) finger plays, (d) playing hide and seek, (e) sharing bites of food, (f) "gimme a kiss," (g) simple board games, (h) rolling a ball.

Review Questions For Parents

1. What do we mean by social contacts? Why are they important?
2. Why is equal sharing important in interacting with a child?
3. Discuss some interaction strategies that might be especially helpful to you.
4. What does it mean to "be in your child's world?" Why is it important?

Sample Challenges

1. Watch for turn-taking opportunities that naturally occur during the week. Keep a list and discuss with parent advisor.

2. Practice *waiting* for your child to take a turn; count to 10, prompt his turn if necessary. Discuss the results.

3. Practice imitating your child's actions, gestures, or vocalizations to prolong his turns.

4. Identify some of the turn-taking strategies you need help with or are eager to try. Use one each day during the week.

Establishing An Effective Communicative Setting

Skill Lesson 5

Get Down on Child's Level

Outline/Parent Objectives

I. Parents will realize that it is important to get down on their child's level as they speak
   A. Speech is more intelligible for the hearing impaired child when the speaker is within 3 feet
   B. The child realizes you are talking to him and will be more attentive and responsive

II. Parents will model getting on their child's level as they communicate

III. Parents will demonstrate *ad concham* stimulation for an infant and will explain that it is important for two basic reasons
   A. It provides auditory stimulation when the child is without his aids
   B. It provides close physical contact with the child

Child Objectives

1. Child will realize *he* is being spoken to and will be more attentive and responsive.
2. Child will be provided with optimal conditions for hearing and understanding.

Materials

None

Lesson

Discussion. When talking to a child, get down on his level, as close to him as possible. Speech is more intelligible for the hearing impaired child when the speaker is within 3 feet from the child. Getting down on the child's level helps him realize you are talking to and interested in *him*, not someone else. A hearing impaired child will better understand speech and be more responsive if he can see and hear the parent clearly.

When a child is without his hearing aids, as at bath time, frequently provide *ad concham* stimulation. *Ad concham* is talking directly into his ear. He will enjoy it, as well as having the additional benefit of the close physical contact. Caution: just because the child's aids are off, don't assume he can't hear or doesn't benefit from your talking to him.

Teaching strategies.

1. During the home visit, parent advisor or parent should talk to the child first standing up and then on his level. Compare his attention and responsiveness.

2. Have parent sit on the floor while parent advisor sits on a chair or stands. Discuss feelings or reactions. List opportunities during the day when the parent can sit at child's level or bring him up to parent's level.

3. When working with an infant, model *ad concham* stimulation and discuss opportunities to use it with the parent. Natural opportunities include (a) reading or talking to the child on your lap, (b) feeding (child in high chair; parent in chair), (c) tea party (parent and child on small chairs), (d) in grocery store with child riding in cart, (e) bathtime (child in tub; parent on knees), (f) dressing (child on lap or parent sitting on floor; child standing), (g) toilet time (child on potty; parent on side of tub or kneeling on floor), (h) helping child brush teeth or wash hands, (i) playing with toys on the floor.

Review Questions For Parents

1. Why is it important to communicate with your child on his level?

2. Why is it especially important to be close to your hearing impaired child when you talk to him?

3. What is *ad concham* stimulation and why is it important?

Sample Challenges

1. This week, sit on the floor with your child or place him on your lap as you talk and play.

2. Place your child on a counter or in a high-chair near you as you work.

3. Stoop down to your child's level when speaking to him.

4. Make an effort to always be within 3 feet of your child as you talk during the week. Observe changes in child's attention and responsiveness.

Establishing An Effective Communicative Setting

Skill Lesson 6

Maintain Eye Contact and Direct Conversation To Child

Outline/Parent Objectives

I. Parents will understand that it is important to maintain eye contact and to direct the conversation to their child. There are three special reasons to do this.
   A. Eyes convey and receive messages.
   B. Eyes help get and maintain the attention of others.
   C. The hearing impaired child attends more to conversation directed to him.

II. Parents will demonstrate the ability to use and maintain eye contact with their child and direct their conversation to him as they speak.

Child Objectives

1. Child will learn to respond to parents' eye contact and begin to maintain eye contact himself.

2. Child will learn to direct his vocalizing and conversation to whoever is receiving his communication.

Materials

None.

Lesson

The following script may be used to demonstrate the importance of eye contact.

> "Eyes are an important source of communication. With our eyes we can send many messages. Have you ever purchased something in a store, post office, or restaurant where the cashier never looked at you while totaling the bill, taking your money, and giving you change? How did you feel? What message did the cashier communicate to you, possibly unconsciously? Has someone ever spoken to you as their eyes frequently glanced at the T.V. or at someone else? Could you concentrate on what they were saying? Do you think they were interested in you? Or have you ever been speaking to someone while they occasionally glanced at their watch or out the window? What messages were their eyes sending? How do you feel when someone looks directly at you and smiles or watches you with interest as you talk?"

We can readily see how important eye contact is in sending and receiving messages. Eye contact and directing the conversation to the child (using Motherese) are essential for getting the child's attention and maintaining that attention during communication. The child will not learn to communicate unless he attends to communication. In a study conducted at the Lexington School for the Deaf (Connors, 1976), mothers of linguistically superior children were found to look at their children more while vocalizing directly to them (using Motherese) than did mothers of other children. Children will be more responsive and learn more from communication when it is directed to them and they are looked at when they are spoken to.

Teaching strategies.

1. Parent advisor and parent should try talking to each other without eye contact or directness. What is the reaction? What are the feelings?

2. Observe the child while (a) talking to him but not looking at him or maintaining eye contact, or (b) looking at him but directing your conversation to someone else. How responsive is he? What does he do?

3. Model the use of this skill in natural home situations, such as: (a) feeding the child in a high-chair, (b) pointing out child's eye, nose, and mouth while child is on parent's lap, (c) playing peek-a-boo, face-to-face, (d) doing simple finger plays that involve hands near the face, (e) changing diapers, (f) playing "give mommy a kiss," (g) getting child dressed, (h) putting a small child in an infant seat on the counter while the mother is washing dishes.

Review Questions For Parents

1. How important is eye contact to communication and conversation between you and your child?

2. What impact does maintaining eye contact and directing your conversations to your child have on his language growth?

Sample Challenges

1. During the week consciously disregard distracting interruptions and other factors as you interact with your child.

2. If your child has poor eye contact, immediately and consistently reinforce the most fleeting eye contact with a smile or word.

3. Play "watching" games, e.g., mimicking gestures, fingerplays, mouth and tongue games.

4. Use puppets near your face to encourage eye contact. (Booklet "Puppet Fun For Hearing Impaired Children" available from the SKI*HI Institute.)

5. Keep on your child's eye level as much as you can this week.

Notes/Supplemental Information

If the child does not look at the parent's face, the parent advisor may need to help the parent do some specific things to teach the child this skill. The parents must be able to request attention from the child in order to teach him new skills efficiently. The following procedure may be used by parents to obtain attention from the child. At mealtime or snacks, place the child in a high chair or infant seat. Sit close with your face about ten inches from child's face. If the child already looks at the food, raise the spoon or piece of food to just below your eyes as you call his name. When the child's gaze approaches your eyes, say "Good!", and immediately place the food in his mouth. Require progressively closer approximation to eye contact before giving food. When the child is consistently looking, begin to fade out the prompts given. If the hand is used to turn the child's face to yours, lessen the pressure used, and remove the pressure just before completing the head alignment. Later use your hand only to start him. If a food prompt is used, lower the spoon or piece of food to your mouth level, then below chin and then chest high, still requiring eye contact before giving the food. When the child reliably makes the response with few or no prompts, begin requiring longer looks before reinforcing. Talk to him for several seconds while he is looking before giving food. Be careful never to place food in the child's mouth as he turns away, even if he has looked. He must be looking at you when receiving food. (Griffin and Sanford, 1975)

Skill Lesson 7
Use Varied Facial Expressions

Outline/Parent Objectives

I. Parents will realize that non-verbal communication clues are important for many reasons.
  A. Ninety-three percent of a communication message is relayed by non-verbal clues.
  B. Non-verbal clues get and maintain a child's attention.
  C. Non-verbal communication transmits a message without words.
  D. Non-verbal communication gives clues to the meaning of words.
  E. A hearing impaired child relies heavily on non-verbal clues.

II. Parents will understand the importance of using facial expressions and how to use them.
  A. Facial expressions are especially important because they can convey a wide range of positive and negative messages.
  B. Facial expressions must be consistent with the verbal message and other non-verbal clues

III. Parents will demonstrate a variety of facial expressions as they communicate.

Child Objectives

1. Child will gain more understanding of parents' communication through their use of interesting facial expressions.
2. Child will begin to use more facial expressions in communication.

Materials

None

Lesson

Discussion. Research indicates that 93% of the total impact of communication on a listener consists of non-verbal components, that is, *how* something is said. The verbal components, the words that are used, comprise the remaining 7%. Of the 93% non-verbal, intonation contributes 38% and expression, gestures, and touch contribute 55%.

The fact that 93% of a message is relayed non-verbally, is especially significant to parents of a hearing impaired child, since parents often think they cannot communicate with their child because he doesn't understand their words. A hearing impaired child relies heavily on the parent's face, voice, gestures, and touch to understand what is being communicated. It is reassuring for parents to realize they can communicate more effectively during their child's pre-verbal period by developing their non-verbal communication skills. Therefore, in the SKI*HI Communication Program, the effective use of non-verbal skills is discussed. These skills include facial expressions, intonation, gestures, and touch. Later, verbal skills will be discussed.

Non-verbal clues are especially important in interacting with a hearing impaired child because (a) they help get and maintain a child's attention; (b) they, more often than words, transmit a message; (c) they give clues to the meaning of words.

It is important that the verbal and the non-verbal cues are sending the same message, and are not confusing the child with mixed messages as he attempts to understand and respond.

Since the child understands over half of what is said through facial expressions and other non-verbal cues, it is important to emphasize communication by facial expressions showing, for example, surprise, delight, sadness, disgust, approval, or disapproval. While the child is vocalizing and gesturing, show him by your facial expressions that you are interested in *his* communication. Remember that it is necessary for the words and expressions to communicate the same feeling. For example, it is confusing to a child for someone to smile and laugh while saying, "Don't touch!"

Remember to smile frequently at a child while talking to him. It is surprising how many parents unintentionally forget to do this! Although children should be exposed to a wide variety of facial expressions, children who see a lot of criticism, negativism, and anxiety in their parents have a slower rate of communication acquisition than children who sense warmth, relaxation, and acceptance in their parents' faces (Greenstein, 1975). Obviously, non-verbal signals such as facial expressions, body postures, and body tension, reflect both the parent's negative and positive feelings. If a child is repeatedly exposed to negative critical expressions or anxious expressions, his language development may be adversely affected. Parent advisors should help parents transmit warm, accepting feelings by relaxing and enjoying their child's unique qualities and minimizing unnecessary concern for the hearing impairment.

Teaching strategies.

1. If parents are having difficulties with their child's behavior, observe to see if *mixed messages* are being sent. Poor behavior is frequently the result of unclear or inconsistent communication. Discuss actual examples and instances with the parents. Help them send a clear, direct message to the child.

2. Choose a sentence such as "Where are we going now?" or "What did you do?" Change its non-verbal message or interpretation as you or the parent vary the facial expression, intonation, gestures, and touch. Discuss the difference in interpretation caused by different non-verbal cues.

Review Questions For Parents

1. Why are non-verbal cues especially important to a hearing impaired child?
2. Why are facial expressions important to effective communication?
3. What different effects (positive or negative) can facial expressions have on your child?

Sample Challenges

1. Observe and list the facial expressions your child uses. Describe the situation in which he used them.

2. Interact with your child in front of a mirror. Observe facial expressions.

3. Have another family member observe and list your facial expressions for a specific period.

4. Use contrasting facial expressions as you talk to your child (warm, smiling, accepting vs. critical, frowning). Observe the child's responses.

5. Converse with your child using varied facial expressions and then no expression at all. What is the child's response?

6. Choose certain situations or times during the day to concentrate solely on increasing interesting facial expressions. Select two or three expressions to use.

7. During the week, observe messages or communication sent through facial, intonation, gestural, or touch cues. List and discuss at the next home visit.

8. Use facial expressions in home activities particularly conducive to facial expression use such as: (a) mirror play, imitating child's facial expressions, (b) peek-a-boo, (c) natural home odors, good and bad (diapers, food, flowers, dog), (d) affection shown to an animal, (e) when child gets hurt (recreate some experiences using action doll play; doll falls down and gets hurt, doll is afraid, doll gets punched), (f) when tasting different things (sour, sweet), (g) a naturally occurring accident, (h) a surprise or present, (i) diapering (wet and stinky), (j) when disciplining, (k) when angry, (l) during feeding time (smiling, "open mouth, m-m-m good"), (m) jack-in-box, (n) alerting to sounds, (o) trying to encourage reluctant child to do something fun.

Skill Lesson 8
Use Intonation

Outline/Parent Objectives

I. Parents will understand that varied intonation is important.
   A. It helps babies attend to and maintain interest in what people are saying.
   B. It helps the child attach meaning to words.
II. Parents will demonstrate the use of varied intonation in their communication with their child.

Child Objectives

1. Child will pay better attention and be more interested in parents' communication.
2. Child will derive more meaning from parents' communication.

Materials

None

Lesson

Discussion. In addition to facial expressions, another important non-verbal skill that has impact on communication is the use of varied intonation. Intonation is the variation of pitch within utterances. A study was conducted at the University of Texas (Blount, Padgug, 1976) to determine which of about 35 features of parental speech was used most frequently in communication with very young children. It was found that exaggerated intonation was the most frequently used feature. There is a reason why parents use exaggerated intonation in their communication with infants. Snow (1976) maintains that parents use exaggerated intonation contours because they elicit greater attention in babies. Parents need to know that their use of intonation with the hearing impaired infant will help the baby attend and maintain interest in what the parent is saying.

Parents reflecting warmth, encouragement, and acceptance in their intonation will increase the ease and speed of language development in their hearing impaired child. Therefore, when communicating with a child, one should use varied intonation and rhythm patterns such as moving the voice up and down, getting loud and then soft, and exaggerating certain words. Ones voice should indicate that what is being said is interesting. Children "turn off" readily to a dead-pan voice. Interesting intonation encourages the child to listen. Good listening skills are necessary for good speech and language.

Intonation has another useful purpose; it helps the child attach meaning to words. For example, through emphasis and intonation he can begin to understand the meaning of "No, no, don't touch." "Oh, are you sad?" "Daddy's home!" A hearing impaired child may have trouble understanding the words, but the tone of voice helps him know what is meant and felt.

Teaching strategies.

1. Relate intonation to adult experiences with "dead-pan" speakers.

2. Select an expression like "What have you done?" Change its meaning by varying the intonation. Discuss with the parent.

3. Have parent select commonly used phrases. Can they be more meaningful by changing or improving intonation?

4. Model use of intonation to parents in natural home situations such as: (a) spontaneous accidents ("Uh, oh!" "Oh no!"), (b) saying hello and goodbye, (c) calling child's name, (d) comforting the child when he is hurt, (e) ring-around-rosy, (f) simple finger plays, (g) going up and down on a swing or slide, and (h) simple games like "peek-a-boo" and "gonna get you."

Review Questions For Parents

1. What does good, effective intonation mean to you? Give examples.
2. Why is varied intonation important in communicating clearly to a hearing impaired child?

Sample Challenges

1. Tape record an interesting experience with your child. Discuss the kinds of intonation and the meanings indicated. How could intonation be changed or improved?

2. Listen to someone else talking to a child. What intonation did they use? How did the child respond?

3. Experiment using varied intonation and then no intonation with your child. Compare responses.

4. Listen during the week for examples of intonation and their meanings. Bring list to home visit for discussion.

5. Increase your use of interesting intonation during activities with your child, such as bath time, dressing, or reading a book. Observe child's response.

Skill Lesson 9
Use Natural Gestures

Outline/Parent Objectives

I. Parents will understand that natural gestures add meaning to communication and encourage the child's use of gestures.

II. Parents will model the use of natural gestures as they communicate.

III. Parents will reward the child's use of gestures by promptly responding.

Child Objectives

1. Child will demonstrate an appreciation for gestures by attending to those used by his parents.

Materials

None

Lesson

Discussion. Another non-verbal cue, the use of gestures, is a natural part of a person's communication. A shrug of the shoulders, looking at a messy room with hands on hips, or an enthusiastic nod all send very definite messages. Gestures are most important for a hearing impaired child to better understand words and feelings. Gestures should be used naturally when talking with a child. Often a child's first indication of *receotive* language is his understanding of words such as "Come here" or "Throw me a kiss" accompanied by gestures. Using natural gestures encourages the child's understanding of them. Many of a child's first *expressive* words are those accompanied by gestures such as waving "bye-bye" or pointing to "Da-da." Rewarding a child's use of gestures by promptly responding with words or imitation is an important step in encouraging communication.

Teaching strategies.

1. Parent and parent advisor list and discuss gestures that are commonly used. What expressions suitable for a child's needs might accompany them?

2. Parent advisor models the use of gestures in natural home situations that are conducive to gesture use such as: (a) phrases that have natural gestures associated with them ("goodbye," "come here," "no-no"), (b) finger plays, (c) hide and seek ("allgone," "where's mama?"), (d) signaling tickling time by wiggling fingers, creeping up and saying "gonna get you"), (e) giving permission (nodding) or denying it (shaking head), (f) reacting to hot and cold, (g) yawning when tired, (h) pursing lips to indicate kiss, (i) holding out hand for child to grasp.

Review Questions For Parents

1. Why are natural gestures important in communicating with young children? hearing impaired children? adults?

2. What specific purpose do they serve?

Sample Challenges

1. During this week, chart gestures used with your children or other adults. Were they natural or stilted? Were they useful?

2. Observe the gestures you use with your hearing impaired child as opposed to those you use with other siblings. Do you use as many with your hearing impaired child? The objective is to use gestures as naturally with a hearing impaired child as with other children.

3. Talk without gestures over a period of time; then talk with gestures. Compare child's responsiveness and attention.

Establishing Effective Non-Verbal Communication

Skill Lesson 10

Use Touch

Outline/Parent Objective

I. Parents will understand the importance of touch.
  A. Touch is an important form of communication.
  B. Touch communicates a variety of feelings.
  C. Touch is very important to babies and young children for conveying love and acceptance.
II. Parents will demonstrate nurturing and loving touches as they communicate.
III. Parents will be comfortable in accepting their child's touch.

Child Objectives

1. Child feels accepted and nurtured through his parents' natural vocalizing and touching.
2. Child learns through his sense of touch.

Materials

1. *James Nurturing Scale*, available through SKI*HI Institute (optional).

Lesson

Discussion. Touch is another powerful means of communication. Without words we can show affection by stroking a child's hair; disapproval or caution by a firm, restraining hand on the arm; or loving acceptance by a squeeze of the hand or a hug. Even the youngest infant is affected by the feelings conveyed by touch or the lack of it.

Some parents of handicapped children may have a tendency to make the child *handicapped* by treating the child differently. These parents may back off from natural, nurturing, touching behaviors because they think of the child as being different. Soon the child acts different because he *is* treated differently. It is important for the parents to nurture their child regardless of age, and indicate acceptance by frequent touching and vocalizing.

Encourage parents to touch their baby or child in a soothing, accepting way while vocalizing to him: pat his hands together, blow gently on his body, pat him playfully, stroke him soothingly, hug him, or give him a squeeze. Help parents convey by touch that they love and enjoy the child.

Encourage parents to let their baby touch them and explore their faces. Enjoying a child's touch conveys acceptance and love. Babies need to touch to learn about their environment. It verifies information they see and hear.

Teaching strategies.

1. Be aware that the use of touch could be a sensitive subject for some parents. Make sure rapport is established before deciding to chart parent's touching skills as described below.

The parent advisor may want to chart the parent's non-verbal reflection of warmth and acceptance vs. criticism and disapproval. The tool below can be used. While the parent is engaged in a natural activity with the child, the parent advisor observes facial expressions, intonations, gestures, and touching behaviors indicative of warmth and support or disapproval. Each utterance of the parent is checked for the emotion it conveys. The end of one parent utterance is indicated by the parent pausing to allow the child a chance to respond communicatively or behaviorally. If video taping is appropriate, the parent advisor could complete the form while viewing a video tape of parent-child interaction.

Emotions Conveyed in Parent Utterances

Parent Utterance	Strong warmth, emotional support, active approval	Subdued acceptance and understanding	Neutrality (no emotions indicated)	Mild disapproval	Negativism, strong disapproval
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

2. Parent advisor and parent may discuss ways of touching to convey both accepting and critical feelings. Role play if desired. Select instances of parent-child interaction for appropriate positive touching.

3. Parent advisor should model how to effectively touch the child in natural home situations that are conducive to the use of touch, such as: (a) child care activities (diapering, bathing, feeding), (b) comforting the child , (c) kissing, and hugging, (d) finger plays (mother uses baby's body to make movements), (e) identifying body parts, (f) gentle tickling.

4. Discuss and leave in home *James' Nurturing Scale*. When observing parents for this scale, keep in mind individual, family and cultural differences and attitudes toward touch.

Review Questions For Parents

1. How important is touch in communicating with a child?
2. Why is a child's sense of touch important to his development?

Sample Challenges

1. Select opportunities for appropriate touching and increase positive, nurturing touches where possible.
2. Be aware during the week of your child's touches and how you respond to them.

Establishing Effective Verbal Communication

Skill Lesson 11

Respond To Child's Cry

Outline/Parent Objectives

I. Parents will understand the importance of the child's cry and how to respond to it.
  A. An infant's cry is his way of communicating his needs and feelings.
  B. Responding warmly to the child's cries helps establish a necessary emotional bond with the parents.

II. Parents will understand the importance of *bonding*.
  A. Bonding is an emotional tie that provides trust and security.
  B. Bonding is necessary for the infant's personal and social development.

III. Parents will view the infant's cry as communication and respond warmly and with reassurance.

Child Objectives

1. Child learns to trust that his parents or caregivers will meet his needs.
2. Child becomes more self-reliant and secure.
3. Child becomes aware that words are a way to communicate.

Materials

None

Lesson

Discussion. An infant's means of early communication is his cry. When his cry is recognized by his parents as his way of conveying his needs and feelings and when it is responded to promptly and warmly, the child begins to develop a bond or attachment. Bonding is the emotional tie between parent and child. The child is bonded to his parents when he senses security in his relationship with them. Infants want and need to be close to their parents and other familiar adults. They must be able to trust and feel secure. An early bond to parents and caregivers is crucial to the child's personal and social development. Communication helps establish that bond.

Talking to a baby while responding to his cry lets him know that you understand his feelings and that your words are a way of communicating. For example, "Oh, you must be wet," or "Are you tired of being alone?" or "Do you want company?" or "You don't feel very well, do you?" Comforting intonation and touch and a concerned facial expression will convey caring and reassurance. Relaxation and pleasure can be transmitted with a smile and gentle vocalizing such as humming a lullabye or saying soothingly, "You feel better now, don't you?"

One study found that babies whose mothers responded more to their cries in the early months, cried less at age one than babies whose mothers did not respond to the early cries. This disputes the common belief that babies are spoiled when parents respond to crying and hold or cuddle them. If a baby knows his mother will respond, he develops trust and reserves crying for special occasions. Rather than creating a tyrant, a responsive warm parent creates a more self-reliant, comfortable baby (Gordon, 1975).

Teaching strategies

1. Refer to *Developing Cognition in Young Hearing Impaired Children* for discussion on bonding as it relates to cognition (available from SKI*HI Institute).

2. Discuss with parents when and why their baby cries. What is he communicating in each instance? Describe the situation. How does the parent usually respond? How does the baby respond?

3. Discuss with parents specific non-verbal skills, phrases, or expressions that convey reassurance and comfort.

Review Questions For Parents

1. Describe bonding in your own words. Why do you think it is important?
2. How can you show your child that you know crying is his way of communicating?

Sample Challenges

1. Chart or list during the week your child's instances of crying, the messages he sends, and your verbal and non-verbal responses.

2. Observe crying situations with other babies. How did the parents respond? How did the baby respond to the parents? Why?

Skill Lesson 12

Stimulate Babbling

Outline/Parent Objectives

I. Parents will understand that babbling is important.
  A. Babbling is an important communicative step in language development.
  B. It provides opportunities to exercise speech muscles and to practice speech sounds.
  C. It provides opportunities to develop good listening habits and auditory discrimination skills.
  D. Babbling "conversations" evolve naturally into verbal or signed conversation.

II. Parents will encourage and stimulate their child's babbling.
  A. They will respond to the child as he vocalizes.
  B. They will imitate his babbling and wait for him to babble again.
  C. They will initiate babbling for their child to hear and enjoy.
  D. They will reinforce their child if he imitates them.
  E. They will vocalize with gestures and motions.

Child Objectives

1. Child will enjoy producing and listening to his own babbling.

2. Child will enjoy listening to other's babbling and possibly begin to *converse* and communicate vocally.

Materials

None

Lesson

Discussion. Babbling is an important natural part of a child's language development. Soon after birth, babies begin gurgling and cooing, experimenting with their voices and sounds, and obviously enjoying listening to themselves. As time goes on, cooing develops into more sophisticated babbling, jargon, and eventually words. But from birth until age 3, when words take over, babbling is a crucial, but enjoyable communicative step to language.

Early crying communicates primitive needs and distress. Babbling widens the communicative horizon by communicating such things as pleasure, delight, contentment, surprise, and sociability. Babbling precedes spoken words and also provides unending opportunities to exercise speech muscles, to practice speech sounds, and to develop listening and auditory discrimination skills. *Conversations* between the parent and child evolve naturally into verbal or signed conversations.

Hearing one's own voice is a vital part of this development. A hearing impaired child needs extra reinforcement to encourage him to listen to his own voice.

Parents can encourage their child's babbling by:

1. Smiling and looking at him as he vocalizes. This also develops good eye contact.

2. Imitating his babbling and giving him time to take his turn vocally, by counting to five or ten. Waiting helps the child understand that you expect him to take a turn. Use lots of facial expressions and intonation to maintain interest.

3. Initiating babbling for the baby to enjoy. Occasionally add a new sound the child hasn't yet produced. The Language Development Scale (available from SKI*HI Institute) indicates at what age a child is capable of producing specific babbling sounds. This scale can be used as a guide in deciding in what order the babbling sounds should be presented to the baby. Parents can initiate babbling sounds in such home situations as: (a) naturally occurring accidents (uh, oh); (b) warning (uh uh uh); (c) food activities (um, um); (d) showing the child dismay or surprise (oooooh). McCarthy (as cited by Vorce, 1978) indicates that a child cannot use a sound in his spontaneous language that he has not previously babbled.

4. Reinforcing the child if he imitates vocalizations by continuing to take turns. He may not repeat the imitation but continue to vocalize as long as he is interested.

5. Vocalizing with gestures or motion as in "peek-a-boo" or tapping his feet together with babbling sounds.

Stimulation of vocalizations is the important goal in this lesson. The child may not imitate babbling sounds until he has had many weeks of listening. More detailed skills for developing vocal imitation are included in the Auditory Program.

Review Questions For Parents

1. Why do you think babbling is important to parent-infant communication; to eventual conversations; to speech development?

2. Do you find it easy to babble with your child? What are the favorite vocal sounds that you use?

Sample Challenges

1. Respond to your child's babbling by talking to him no matter how far away you are. Be aware of how often he babbles and vocalizes. List the times and situations.

2. Combine vocalizations with body motions; e.g. say "Rock-rock" as you rock him, or "la-la-la-la" as you tap his hands or feet together. There are unlimited vowel, consonant, and rhythm variations to use. Choose 2 for the week.

3. Imitate your child's gestures and motions and put vocalizations with them. Movements are easier for a child to imitate. How does he respond?

4. Associate and use appropriate vocal sounds with animals, vehicles, and objects as you play together.

5. Look at pictures and use sounds appropriate to the items in the picture. Combine with gestures or actions for added interest and to encourage imitation.

6. Use simple finger plays with abundant non-verbal clues.

Establishing Effective Verbal Communication

Skill Lesson 13

Identify and Respond to Communicative Intents

Outline/Parent Objectives

I. Parents will demonstrate the ability to identify the child's communicative intents.
   A. They will recognize the child's non-verbal, as well as verbal, intents such as gazing, pointing and other gestures, facial expressions, body language, babbling and jargon.
   B. They will interpret the meaning of the child's message.

II. Parents will demonstrate how to respond effectively to the child's communicative intents.
   A. They will respond to the child promptly and as often as possible.
   B. They will respond in simple language.
   C. They will wait expectantly and give the child time to respond back.

Child Objectives

1. Child will be encouraged to communicate more often.
2. Child will be encouraged to communicate back or *converse*.

Materials

None

Lesson

Discussion. Language is best learned in a non-stressful situation where the child spontaneously interacts and communicates with others. Children are constantly giving their parents clues as to what they want, what they see, how they feel. As was discussed in Information Lesson V, every infant or child is ready to communicate in some way and any non-verbal or verbal clue can be a communicative intent. For example, babies wiggle in anticipation, quiet their cry when picked up and comforted, gurgle with pleasure, or cry in hunger. A young child may have different opportunities and ways to communicate. He might point to go outside, say "da" as he drops a toy, frown in confusion, or shake his head in stubborn refusal. Some behaviors are obvious communicative intents. Others may simply be interactive but are potential communicative intents. As parents interact with their child, they need to be constant observers and interpreters of their child's behaviors in order to become skilled in the following areas:

1. **Identifying** communicative intents or potential opportunities for communicating.
2. **Interpreting** what the child is communicating.
3. **Responding** promptly in simple language.

Consistent identification and response to actual or potential communicative intents results in opportunities for conversations; the essential mechanism for developing language.

Identifying communicative intents. All of the preceding instances are examples of communicative behaviors and are opportunities for interaction and conversation. The examples include non-verbal clues that are especially important during a child's early years: gazing, pointing or other gestures, facial expressions, body language, babbling and jargon. When the child is not yet communicating regularly, treat random gestures, expressions and vocal sounds as communication: e.g., laugh and smile when the child laughs and smiles; put something in his hand when he reaches out. This technique works well when the child is just beginning to learn that his actions have effects on others. Interpret his behavior as accurately as possible. Attaching meaning to a child's communication lets him know he is understood. A prompt response is more rewarding and meaningful than a delayed response.

Teaching strategies for identifying communicative intents.

1. During the home visit, the parent and parent advisor can observe the child, list all communication intents the child makes, and describe the meanings he conveyed or possibly meant to convey. Discuss.

2. Parent advisor can observe an interaction between parent and child and chart number of communication intents vs. responses. The goal is for responses to nearly equal the opportunities.

Responding to communicative intents. It is important for parents to identify their child's communicative intents and then respond in simple language. It is also important to be conversational when responding. In other words, *expect* the child to communicate back. Show that the child is expected to take a turn by giving him sufficient clues and time to respond. By waiting for the child's response, parents and parent advisor can see how, what, and why the child communicates. Adults need to learn to become conversational partners, not teachers who know all the answers.

It may be difficult at first, but it soon becomes rewarding when you stop talking *at* the child and always taking *his* turn, and begin talking *with* him and expecting him to carry his share of the conversation.

Below are some examples of responding to a child using simple language and conversational style.

Child's Communicative Intents	**Parent Responses**
A. *Pointing* (what is the child pointing at?)	P: Do you see a dog? (WAIT and look expectantly) Ch: looks at dog again P: That's a big dog! (WAIT) Ch: looks at parent P: Arf arf arf. (WAIT) Ch: looks at parent again or vocalizes

B. *Trying to open refrigerator*

P: Open it. Open the door. (WAIT)
Ch: opens door
P: Want some juice? (WAIT)
Ch: nods or reaches toward juice
P: We need a glass. (WAIT)
Ch: looks toward cabinet or points
P: puts glass on table (WAIT) Good juice!
Ch: signals to pour juice

C. *Tugging* (perhaps at the mother's leg or dress)

P: You want? (WAIT)
Ch: pulls more
P: Marshmallows? (WAIT)
Ch: runs to cabinet and vocalizes
P: Want some? (WAIT)
Ch: nods or jumps up and down
P: Where's a bowl?

D. *Stretching his arm up.*

P: You want up? (WAIT)
Ch: waving arms more or "uh uh"
P: OK. Up-up-up!
Ch: smiles
P: You're happy now? (smiling)

E. *Looking* (Child is looking at the mother)

P: Hi, Jessie! You see me?
Ch: smiles
P: Peekaboo!
Ch: laughs and covers his face with his hands
P: Peekaboo!

F. *Child is vocalizing* to make a want known. (What does the child want?)

P: "Ca-Ca." Cookie, want a cookie? (WAIT)
Ch: vocalizes
P: "Ca-ca." Cookie. Opens the box and holds box out (WAIT)
Ch: begins reaching
P: Where's the cookie? (WAIT)
Ch: "Ah"
P: Cookie. Want a cookie? (WAIT)

These examples of communication and response represent valuable opportunities for language-rich conversations in which the child is an active participant. The long term goal is to prolong these conversations; but that comes in time and with practice. The first steps to learn are:

1. Identify the child's communicative intents.
2. Respond immediately as often as possible.
3. Respond in simple *child-like* language.
4. WAIT to give the child time to respond back.

Teaching strategies.

1. Have parents list some communication behaviors typical of their child. Together write out a brief script of suitable responses that encourage another response from the child, as in the examples.

2. Help the parent remain natural and spontaneous. There is no one correct response. "Doing what comes naturally," is often the best.

3. Help parents *brainstorm* activities or experiences to practice the strategies suggested. Model and perform during the home visit and leave for weekly challenge.

4. Treat body language and vocal sounds as communication, for example: (a) when child stretches or points because he wants something from fridge or cupboard, (b) when child is looking for something, (c) when child gets his coat because he wants to go bye-bye, (d) when child stretches because he wants to get up, (e) when child opens his mouth or reaches during feeding time. The goal is to help the child communicate the best way he can. Respond immediately.

5. Treat single words or signs as communicative intents. As the child begins to use words more often, give him less attention for body language or sounds. This is especially important when one *knows* that he has a word or sign, but is trying to send a message with body language or vocalizing.

Review Questions For Parents

1. Is it helpful to watch specifically for your child's communication intents or opportunities to communicate? Does it make you more aware of them?

2. Why is it important to respond immediately and often to [illegible] child's communication messages?

3. Why is simple language important?

4. Why might some parents find it difficult to *wait* in communicating with their child?

5. Give examples of how conversing *with* your child differs from talking *to* your child.

Sample Challenges

1. Choose a specific time (an hour, morning, mealtime, or evening) to practice the four steps to encourage your child's conversation.

2. Observe and describe potential opportunities for communication, such as your child's facial expressions, gestures or vocalizations. Respond to them!

Establishing Effective Verbal Communication

Skill Lesson 14

Use Conversational Turn-Taking

Outline/Parent Objectives

I. Parents will recognize that brief social contacts and natural daily events offer opportunities for language-rich opportunities.

II. Parents will demonstrate techniques to assist their child in taking conversational turns.
   A. Wait for the child to communicate; expect him to respond.
   B. Respond in a way that gets the child to communicate back.
   C. Signal the child to take his turn.
   D. Communicate for a response; avoid speech which does not stimulate a response.

Child Objectives

1. Child will become aware he is expected to communicate back.
2. Child will begin initiating social contacts more frequently and increase his uses of communication.
3. Child will grow in conversational skills and in his ability to gain language.

Material

None

Lesson

Discussion. The skill of *interactive turn-taking*, as discussed in Skill Lesson 4, gave the parents and their child practice in equally sharing an activity or experience (e.g., stacking blocks, unloading a dryer, making faces.) Each learned to wait while the other took his turn. In *conversational turn-taking,* parent and child take equal turns with communication messages, whether they are using gestures, sounds or words, or a combination of all three.

Most young children have short attention spans and their social contacts with their parents are brief, even fleeting; but each brief social contact can be turned into a conversation.

The examples below illustrate two episodes in which the adult has several opportunities to convert simple contacts into brief conversations.

1. Not turning social contacts into conversations:	**2. Turning social contacts into conversations:**
C. (child)	
P. (parent)	
C. Runs by with dad's hat on	C. Runs by with dad's hat on
P. Continues setting table with no comment	P. "Are you daddy?" Continues setting the table
C. Flops down on the floor	C. "Me daddy." Flops down on the floor
P. "Go play."	P. "All tired out?"
C. Goes to refrigerator	C. "Uh, huh." goes to refrigerator
P. "Tommy, go play."	P. "Get the butter, Tommy."
	C. "Buh"

Natural daily events offer constant opportunities for conversation even while a parent is doing something else. Parent advisors should teach the parents the following techniques to help the child take conversational turns.

1. **Wait for the child to communicate back.** If parents feel they are doing all of the talking, it may be that they are not giving the child a chance to communicate.

Send a message with body language, sounds or words. Then wait for the child to respond. Remember he has not had as much practice in communicating as you have, so it may take time. Wait with anticipation. Expect him to communicate.

2. **Respond in a way that gets the child to communicate back; chain.** Do or say anything that will keep the conversation going.

Examples:

	1. Not expecting or encouraging the child to communicate:	**2. Expecting and encouraging the child to communicate back:**
With body language and sounds:	C. Baby in crib loses bottle, whines.	C. Baby in crib loses bottle, whines.
	P. Hands bottle back "Here you go. There's your bottle."	P. Imitates whine. "Lost your bottle?" Picks it up and waits.
		C. Whines more.
		P. Holds up bottle "This your bottle?" Smiles, waits expectantly 2-3 seconds.
		C. Vocalizes more, wiggles in anticipation.
		P. Hands baby bottle. "Here you go. Here's your bottle."

Without sounds or with words and sounds:	C. Points to blanket.	C. Points to blanket.
	P. Gives blanket.	P. Shows blanket, says "huh?"
	C. "Bababa" holds blanket.	C. Points and says "baba."
	P. "That's your blanket."	P. "Blanket? Mine?" (touches blanket).
		C. "No, me" (grabs blanket, points to bigger one).
		P. "That's mine, right?"
With words:	C. "Want blanky."	C. "Want blanky."
	P. "Blanket, here it is."	P. "Blanket" (holds blanket out).
		C. "Me blanket" (reaches).
		P. "Your blanket. Here."

By prolonging the contact, parents provide more opportunities for child learning. While questions appear to be an easy way to chain a response, they should not be used exclusively. When adults question, they are often running the show. Waiting and imitating the child are two ways to transfer the lead to the child, thus staging the conversation to the child's interest.

3. **Signaling the child to take his turn.** Have parents point to the child when it is his turn to talk, put their mouths in the shape of the words they expect him to say and then *wait*. Have parents smile and use their eyes and faces to encourage their child to communicate.

4. **Communicate for a response; avoid giving all the answers.** When parents communicate to their child, have them always expect their child to respond. If they say something like "Going outside? Have fun," it is doubtful the child will respond. If they say "get up" and use their hands to show what is meant, it is more likely the child will respond.

If parents use a lot of sentences the child doesn't understand or that do not really invite a response, the child may begin to ignore them. Make sure parents look at the child and use sentences he can understand and that will encourage him to respond.

Teaching strategies.

1. Practice each of the four strategies separately.
2. Help parents *brainstorm* activities and opportunities to practice the strategies. Write a list. Model and perform during home visit.
3. List ways a child can be *signaled* to take his turn.
4. Observe and point out examples of speech which does not stimulate a response.
5. Make sure the parents understand the concepts in Information Lesson X—*Parent Communication: Interaction and Conversation* and Skill Lesson 4—*Use Interactive Turn-Taking*. Review these lessons if necessary.

Review Questions For Parents

1. How do you feel in a conversation when another person does not allow you equal opportunity to share your thoughts?
2. How has turn-taking affected your interaction with your child?
3. What are some things you can do to encourage your child to take a turn?

Sample Challenges

1. This week, respond to your child in a way that will encourage him to take turns (chain). Wait for your child to respond. Practice these two strategies during longer time periods of the day when your child initiates those brief social contacts, and during informal activities such as feeding, dressing, playing or bathing.

Establishing Effective Verbal Communication

Skill Lesson 15

Use Meaningful Conversation

Outline/Parent Objectives

- I. Parents will converse about what interests and motivates their child
  - A. Obvious things that are happening to him
  - B. Meaningful emotional experiences
  - C. The *here and now*
  - D. Things and events that interest him
  - E. Events that are shared together
- II. Parents will model their ability to converse at their child's level
  - A. Communicate in short simple sentences and expressions
  - B. Match the child's communication and then model a more mature language level
- III. Parents will model how to *up the ante* where appropriate
  - A. Recognize when the child is ready to move to a more mature level
  - B. Encourage a more mature communicative level

Child Objectives

1. Child will be interested in conversing with others.
2. Child will be learning language appropriate to his level.

Materials

None

Lesson

A typical answer to the question "How do I help my hearing impaired child grow in language?" is "Talk to your child!" And that is true, as far as it goes. But a more precise answer would be, "Communicate with your child since language is learned by participating." Rather than talking *to* the child, converse *with* the child.

Another question then arises "Ok, but what do we converse about?" The answer to this is: let the child take the lead. He knows what interests him, what motivates him. Let him communicate about the knowledge he has gained from his experiences.

Converse with the child about:

1. Obvious things that are happening to him.

2. The meaningful, emotional experiences that are happening to him (i.e., child experiences frustration, anger, delight, surprise, contentment).

3. The *here and now,* not what has happened or will happen. That comes later.

4. Things that interest him such as bugs, toys, small animals, himself. Take advantage of his natural curiosity.

5. Talk about what you are doing together.

Studies indicate that a child's first words are words which express whole thoughts, which are concerned with meaningful daily activities, and which are tinged with emotion. Children do not necessarily use words which are easy to say (visibility of sounds or ease with which sounds are made). Rather, they use words which express their emotions and fulfill their needs. There is a motivation for a child to say "drink" when he is thirsty or "broke" when the dish falls and breaks because he is vitally, emotionally interested in these subjects. Even if children are given repeated exposure to non-functional, non-meaningful words in tutoring sessions, their first words will still be words such as *fall, up,* and *dirty* that are concerned with their emotional experiences. Parents need to observe the child's desires, interests, and emotional states and communicate about them.

Matching the child's communication level. If children learn in great part from their natural models in the family, then it follows that the models need to communicate in ways the child will attend to, understand and process. Parents often communicate with their hearing impaired child in long sentences far above the child's level of comprehension. A parent may say "You know you shouldn't be doing that; I've told you at least a dozen times not to play with that." When a child has only a few words in his vocabulary, this will not help him learn language. Instead, if the parent gestures and calls the child's name and says "no, play," the child will be more likely to understand and use the phrase. Parents need to remember to use simple sentences and expressions appropriate to the child's language level. However, parents also need to realize that a child learns language from their modeling language *slightly* above the child's level. For example, if a child uses a gesture, parents should imitate (match) his gesture and then add a sound. The parents will be more likely to get the child's attention if they communicate in the same way the child does (match) and then add a more mature communication form. The following example demonstrates how a mother speaks in complicated sentences and never matches the child's gestures.

Example A: No matching or effective modeling

C. Reaches to mother, says "Uh"
P. "You can talk better than that"
C. "Uh-uh"
P. "I know what you want, just say it!"
C. Walks away
P. "You come back here"
C. Plays by himself

The mother in example B uses the child's gestures and speaks in words just above his level. In this interaction the child sees that communicating with others can be a fun alternative to solo play.

Example B: Matching and effective modeling

C. Reaches, says "Uh"
P. Reaches down and says, "Uh, what?"
C. Grabs her hand, says "Uh"
P. Lifts the child up, "Up high! Now what?"
C. "Dow" points
P. Points, "Down you go."

Upping the ante. Beyond the basic conversation rule "you have to give to get" a child must also learn to "give his best." Parents must learn not to readily accept old ways of communicating but to wait for and give clear cues for more mature communication. This is called *upping the ante* (Brisner, 1977) and can be applied at any developmental level. *Upping the ante* is a natural process of *showing* the child what more he can do, *expecting* it from the child, and *encouraging* it. However, it should never be stressful. This skill is best used when a child is communicating regularly at one level, e.g., body language, gestures, sounds or single words. Children need a large repertoire at one level before the next is required. Below are examples of *upping the ante* and not *upping the ante*.

1. Not upping the ante

C. Whines, reaches up
P. Picks child up
P. "What do you want?"
C. Points to kitchen
P. Takes child to kitchen
P. "Drink or food?"
C. Wiggles to get down
P. Lets him down
C. Goes to cupboard and gets crackers
C. Tries to open box, gives box to parent
P. "I'll open it"
C. Takes cracker and eats it

2. Upping the ante

C. Whines, reaches up
P. Imitates whine, "What?
C. "Uh" reaching
P. "Up you go" Picks child up
C. Points to kitchen
P. Waits, plays dumb, looks at child expecting him to talk
C. "Cuh-cuh"
P. "Want a cookie?"
C. "Wa cuh-cuh"
P. Let's go (goes to cupboard)
C. "Uh" pointing
P. "Cookie up there?"
C. Nods eagerly, reaching

The second example encouraged more mature communication from a child who is able to provide it. This technique is not for teaching the child something entirely new; modeling is better for teaching new communication. Rather, use it when you know the child is capable of using a more mature communicative form.

Teaching Strategies.

1. Parent advisor models the following communication strategies to the parents: (a) let the child take the lead in conversing; he knows what interests and motivates him; (b) match the child's communication and then add a more mature communication form to it; (3) *up the ante;* help the child *give his best.*

2. Parent advisor and parent observe child *from the sidelines* to determine the child's interests, what he is doing and feeling. Discuss these things that motivate the child and remind parents to converse with the child about these things.

3. Discuss what communicative level the child is on: random actions, gestures, vocalizations (babbling), jargon, or single words. Record some communication the child uses. How would parents match the child's level and add more mature communication forms?

4. Take a parent's utterance and break it down to a more simple form slightly above the child's communication level. Take a parent advisor's utterance and do the same. Have parent, as the *expert* on her child's level, critique the parent advisor.

Review Questions For Parents

1. Can you think of experiences and actions interesting to your child?

2. How difficult is it for you to communicate just above your child's level? When you do this, do you see any difference in how your child responds?

3. Give some examples of *upping the ante*. Is your child ready to move to a more mature communication level?

Sample Challenges

1. Observe your child's communications of emotions. Respond in conversational style.

2. Practice matching your child's communication level and add a more mature communication level.

3 Practice *upping the ante* if your child is ready.

4. Try letting your child take the lead in conversation topics.

Reference and Reading List For Parent Advisors For Skill Lessons

Blount, B. G. & Padgug, E. J. (1976). Prosodic, paralinguistic and interactional features in parent-child speech: English and Spanish. *Journal of Child Language, 4,* 67-86.

Brisner, J. *The role of dialogue in language acquisition.* Paper presented at conference on the Child's Conception of Language. Max Planck Society in Linguistics, Nijumegan, Holland, May 1977.

Conner, L. E. (1976). New directions in infant programs for the deaf. *Volta Review,* January, 8-15.

Greenstein, J. M. (1975). *Methods of fostering language in deaf infants.* Final Report to HEW, Grant #OE 6-0-77-539.

Griffin, P. M. & Sanford, A. R. (1975). *Learning accomplishment profile for infants.* Chapel Hill Training Outreach Project (Funded by BEH, U.S. Dept. of HEW). Winston Salem, NC: Kaplan Press.

McDonald, J. D. & Gillette, Y. (1982). *A conversational approach to language delay: Problems and solutions.* Nisonger Center and Communications Department, Ohio State University.

Mehrabian, A. (1968). Communication without words. *Psychology Today,* Sept., 53-55.

Snow, C. E. (1976). The development of conversation between mothers and babies. *Journal of Child Language, 4,* 1-22.

Vorce, E. (1978). Speech in the preschool for the deaf. In *Readings in Deaf Education,* pp 74-76. Guilford, CT: Special Learning Corporation.

UNIT 6

HOME AUDITORY PROGRAM

Introduction

Rationale/Goals

A complete, auditory program for hearing impaired children must have the following goals: (a) early identification, (b) early fitting of amplification, (c) a means of evaluating the infant for the correct aid (d) operable aids are being worn full time by the child, (e) a means of teaching the child to use his residual hearing so that he is able to hear and derive meaning from the vocalizations of others and relate them to his own vocal productions.

The first four goals have been discussed in the Home Hearing Aid Program. The Home Auditory Program addresses the fifth goal. It is based on the developmental process and the role that hearing plays in this process. Speech development, cognitive and language development, and social and emotional development are all directly or indirectly a part of this process. The concept of critical age and sensory deprivation were presented in the hearing aid program. Cognition, communication, language, emotional and social development are discussed more specifically in additional sections of the manual. The goal of SKI*HI is to develop auditory, vocal, linguistic and communicative skills within the context of the infant's cognitive, social and emotional needs.

The hearing aids will make many sounds audible, but this is no guarantee that the child will establish the needed perceptual skills because the child's level of tolerance for amplified sound and the discrimination capacity of the damaged hearing mechanism is unknown. Also hearing aid usage is not always 100 percent because of dead batteries, broken aids, plugged earmolds, or inconsistent usage. Thus the neural system may not receive the consistent auditory input needed for the development of perceptual skills. Some infants and children also have perceptual difficulties *in addition* to peripheral hearing loss.

These same problems may hinder speech development. Observation reveals that profoundly deaf children vocalize reflexively; however, without auditory feedback and auditory modeling from their parents, they will not progress beyond the reflexive stage. Once hearing aid usage is established, the same factors which hinder speech development may hamper auditory perceptual development.

If infants and young children are to develop auditory and speech skills, they need to pass through the stages outlined in this section. The goal of this section is for the infant to develop the underlying auditory skills and establish the auditory-motor associations that underly speech. The parents will provide the infant with stimulation activities designed to help develop auditory memory for sound patterns and pitch changes as well as to develop vowels and consonants. In other words, the child will not only hear, but will also *listen*. These lessons should be utilized along with whatever educational methodology is appropriate for the child.

Despite some disagreement in the field of education of the deaf, it appears indisputable that maximal use of residual hearing is beneficial to all hearing-impaired children, either as a primary means of reception or as a supplement to visual reception. Realization of maximal use of residual hearing demands the following: (a) consistent monitoring of amplification, (b) consistent auditory input associated with meaningful, interesting daily activities regardless of what other stimuli are available.

According to Boothroyd (1982), the goal of a successful auditory program is a hearing impaired child who will: attend to sound, attend to differences among sounds, recognize objects and events from the sounds they make, be alerted by sounds, use hearing for the perception of space, use hearing for the perception of speech and use hearing to control the production of speech. The objectives of this section are designed to meet this goal.

As specific parent and child objectives are planned, several underlying factors need to be considered: the first is the *type* of response the infant or child will give to sound. Response type is based on physiological capability and is independent of the level of sound (dB, loudness) needed to elicit the response.

Expected Responses for Normal Hearing Infants by Age

from Downs' Auditory Behavior Index for Infants

Age	Expected Response
0 – 6 weeks	Eye-widening, eye-blink, stirring or arousal from sleep, startle
6 weeks – 4 months	Eye-widening, eye-shift, eye-blink, quieting; beginning rudimentary head turn by 4 months
4 – 7 months	Head-turn on lateral plane toward sound; listening attitude (initially may turn head away from sound *and* toward sound)
7 – 9 months	Direct localization of sounds to side, indirectly below ear level
9 – 13 months	Direct localization of sounds to side, directly below ear level, indirectly above ear level
13 – 16 months	Direct localization of sound on side, above and below
16 – 21 months	Direct localization of sound on side, above and below
21 – 24 months	Direct localization of sound on side, above and below

Utilize this chart as a general guide to help parent advisor and parent know what type of response to sound is likely to occur. Remember to consider the prior skills necessary for the responses. For example, if the infant is 4 months old and thus the *expected* response to sound is a beginning head turn, the infant must have already established the skill of head control. Or if the child is *expected* to localize above, he must have enough trunk control to look up without falling over.

The audiologist's aided audiogram data indicates responses to warble pure tones 250 - 6000 Hz obtained with the child wearing his aids in the sound field situation. Use this data with expected response to determine the *level* at which the child hears. Use the following charts depicting the frequency and intensity of speech sounds to determine which speech sounds are likely to be heard.

Frequencies of Consonants

θ*			About 6000
ð	250 - 300		4500 - 6000
s			5000 - 6000
z	200 - 300		4000 - 5000
f			4500 - 5000
v	300 - 400		3500 - 4500
t			2500 - 3500
d	300 - 400		2500 - 3000
k	300 - 400		2000 - 2500
g	200 - 300		2000 - 3000
l	250 - 400		2000 - 3000
p		1500 - 2000	
b	300 - 400		2000 - 3000
h		1500 - 2000	
sh		1500 - 2000	4500 - 5500
ch		1500 - 2000	4000 - 5000
j	200 - 300		2000 - 3000
m	250 - 350	1000 - 1500	2500 - 3500
n	250 - 350	1000 - 1500	2500 - 3000
ng	250 - 400	1000 - 1500	2000 - 3000
r	600 - 800	1000 - 1500	2000 - 2100

*Note: The sign θ is the same as th as in thin, and the sign ð is the same as Th as in the.

The relative intensity level of 33 speech sounds

			dB				dB
ô	as in	ball	60.0	n	as in	no	46.8
u	as in	sun	59.6	m	as in	me	45.4
ō	as in	home	59.6	Th	as in	the	44.2
ī	as in	mine	59.5	t	as in	tap	44.1
ou	as in	house	59.2	h	as in	hat	43.9
a	as in	cat	59.2	k	as in	key	43.8
e	as in	ten	58.4	j	as in	jump	43.7
o	as in	top	57.4	f	as in	four	43.6
u̇	as in	cook	57.1	g	as in	girl	42.9
ü	as in	school	55.9	s	as in	sit	42.4
l	as in	lamb	53.5	z	as in	zip	41.6
ā	as in	play	53.3	v	as in	van	41.4
i	as in	bit	52.6	p	as in	pet	40.6
ē	as in	team	49.4	d	as in	doll	38.9
ng	as in	ring	48.9	b	as in	bat	38.8
sh	as in	sheep	48.9	th	as in	thin	38.7
ch	as in	chair	47.2				

Remember to have the audiologist obtain aided testing data for as many frequencies as possible. Many hearing impaired infants fail to give unaided responses for the higher frequencies; however, this does not necessarily mean that there is no hearing for these frequencies. It may be that the child's response is beyond the limits of the audiometer but may be testable when utilizing wearable amplification. It is also possible that not all responses indicate hearing; some low-frequency responses may be from tactile sensation.

In addition to considering the *type* and *level* of auditory response, carefully review the stages of expected expressive language development on the SKI*HI Language Development Scale (LDS) which is available from the SKI*HI Institute or the Communication – Language Checklist which is on page 113. Be aware that there are several suggested orders of speech sound development. In addition, remember the primary goal is the stimulation of speech in infants, not teaching speech.

D. Ling (1978) suggests auditory criteria for order of development of sounds. His hierarchy is included as a possible guide for speech production expectations. His book, which is cited on page 389, can be used for more information.

1. Vocalization
   Use of voice spontaneously and on demand
2. Voice Patterns
   Gross control of duration, intensity, pitch
3. Long Vowels and Diphthongs
   [a], [i], [u], [aʊ], [aɪ], [ɔ], [ɔɪ], [o], [e]

4. Consonants (Step 1)
   - Plosive [b] or [p]
   - Stop [b] or [p]
   - Semi-vowels [w] or [ʍ]
   - Fricative [h]
   - Fricative [f] or [v]
   - Fricative [θ] or [ð]
   - Nasal [m]
5. Short Vowels
   - [ɛ], [ʊ], [ɪ], [æ], [ʌ], schwa [ə], [ɑ]
6. Consonants (Step 2)
   - Plosive [d] and [t]
   - Stops [d] and [t]
   - Nasal [n]
   - Semi-vowel [j]
   - Liquid [l]
   - Fricatives [ʃ] and [ʒ]
   - Fricatives [s] and [z]
7. Consonants (Step 3)
   - Plosive [g] and [k]
   - Stops [k] and [g]
   - Nasal [n]
   - Liquid [r]
   - Affricates [tʃ] and [dʒ]
8. Vowels with [r] Color
   - [ɝ] and [ɚ]
9. Consonants (Step 4)
   - Voiced-voiceless distinction in plosives and stops
   - Voiced-voiceless distinction in fricatives and affricatives
10. Consonant Blends (Initial)
11. Consonant Blends (Final)

From Ling, D. (1978). *Teacher/clinician's planbook and guides to the development of speech skills*. Alexander Graham Bell Association for the Deaf.

Other common symbols and key word charts are listed following this introduction section (page 398). Please note these are not listed in order of speech production expectations.

Another suggestion for order of development of sounds comes from Calvert and Silverman (1975) who suggest that the rate and sequence with which new sounds are introduced depends on many factors, one of which may be the ease with which children have been observed to learn the production of sounds.

	Consonants					Vowels			
Easiest group to develop	m	p	f	b	th	-u-	a(r)	oo	ou
	t	wh	h	n	d	ee	aw	-a-	i-e
↕	k	w	g	y	v	oi	o-e	u-e	a-e
Hardest group to develop	s	th	z	sh	ng	oo	-i-	-e-	ur
	l	ch	r	j	zh				

From Calvert, D.R. & Silverman, S.R. (1975). *Speech and deafness*. Alexander Graham Bell Association for the Deaf.

The goals for speech stimulation in the home are: (a) for the child to vocalize abundantly regardless of the characteristics of the vocalization, (b) vocalize with a wide range of voice patterns (pitch, stress, rhythm, duration, and pauses within one breath), and then (c) produce vowels. The voiced components of speech carry the intonation, stress, rhythm, duration, and pauses within one breath. Since information about voicing is available below 300 Hz, these aspects of speech are usually audible to most hearing-impaired infants who have appropriate amplification. Only after these first three stages would it be appropriate to work directly on the production of consonants although providing *listening* stimulation for consonants is appropriate. These early skills provide the breath grouping, stream of voice patterns, and sensorimotor capabilities on which later consonant success depends. The main stages through which children pass as they develop speech are: (a) undifferentiated vocalizations, (b) voice patterns varying in duration, intensity, and pitch, (c) production of distinctly different vowels and (d) consonant and consonant blend production.

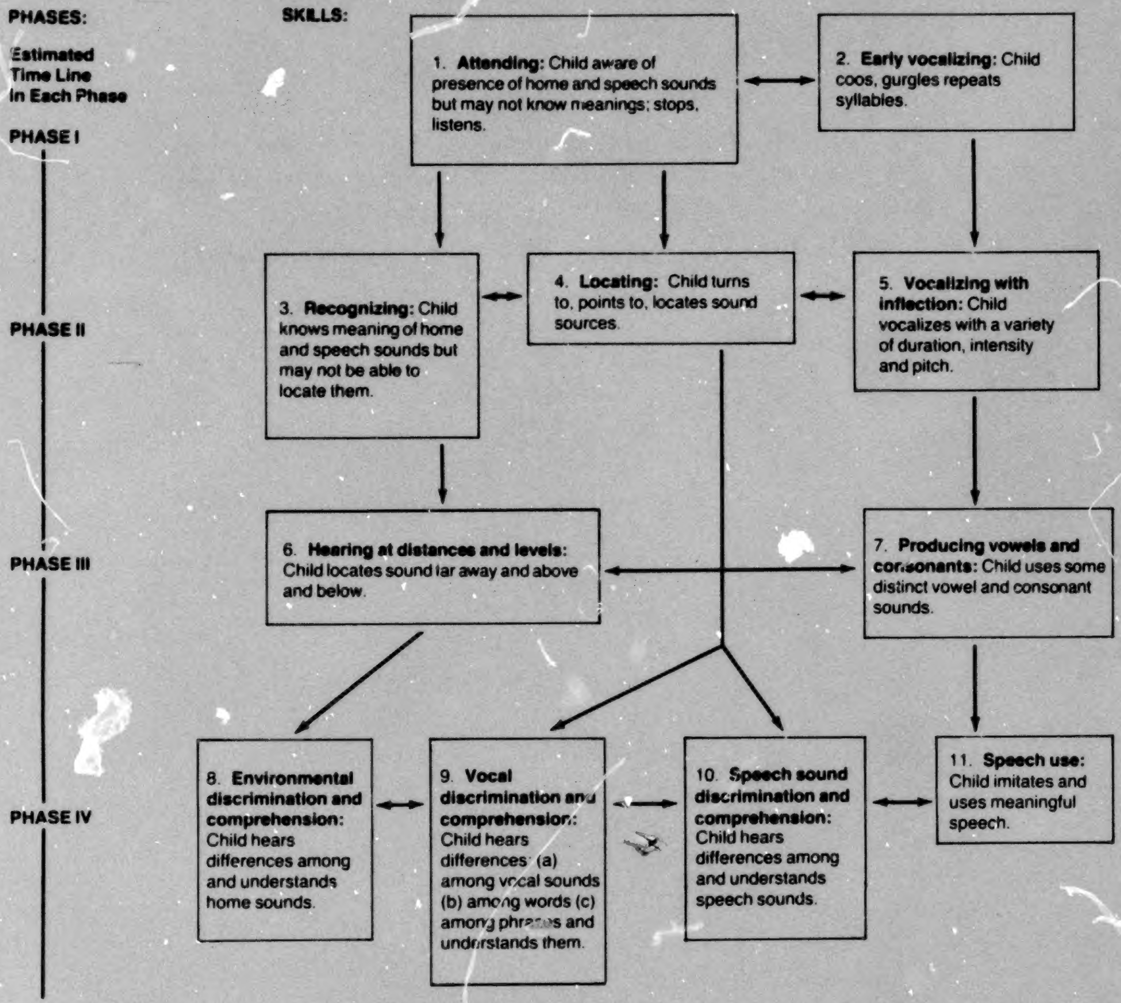
Hopefully, the infant in the home will learn to become aware of sounds in his environment and respond appropriately to them; become aware of the sounds others make and derive meaning from them; hear differences between the speech sounds he makes; and compare his vocalizations to his parents.

Overview of Program

The four phases and eleven skills of the auditory program are shown below. The approximate time line indicates the estimated amount of time spent by a profoundly deaf infant in each phase. The age of the child upon entry into the program and the amount of hearing loss are among the factors which will affect the time needed to progress through the four phases.

Phases	Skills
Phase I (4-7 months)	1. ATTENDING: child aware of presence of home and/or speech sounds but may not know meanings; stops, listens, etc.
	2. EARLY VOCALIZING: child coos, gurgles, repeats syllables, etc.
Phase II (5-16 months)	3. RECOGNIZING: child knows meaning of home and/or speech sounds but may not be able to locate; smiles when hears Daddy home, etc.
	4. LOCATING: child turns to, points to, locates sound sources
	5. VOCALIZING WITH INFLECTION: high/low, loud/soft and/or up/down
Phase III (9-14 months)	6. HEARING AT DISTANCES AND LEVELS: child locates sounds far away and/or above and below
	7. PRODUCING SOME VOWELS AND CONSONANTS
Phase IV (12-18 months)	8. ENVIRONMENTAL DISCRIMINATION AND COMPREHENSION: child hears differences among and/or understands home sounds
	9. VOCAL DISCRIMINATION AND COMPREHENSION: child hears differences (a) among vocal sounds, (b) among words, or (c) among phrases and/or understands them
	10. SPEECH SOUND DISCRIMINATION AND COMPREHENSION: child hears differences among and/or understands distinct speech sounds
	11. SPEECH USE: child imitates and/or uses speech meaningfully

Infants may not move sequentially from one skill to the next higher skill. For example, the diagram below shows how an infant may move from attending to locating without showing early vocalizing, or from locating to vocal and speech discrimination and comprehension without showing hearing at distances and levels.


PHASES:
Estimated Time Line In Each Phase
SKILLS:
PHASE I
PHASE II
PHASE III
PHASE IV
1. Attending: Child aware of presence of home and speech sounds but may not know meanings; stops, listens.
2. Early vocalizing: Child coos, gurgles repeats syllables.
3. Recognizing: Child knows meaning of home and speech sounds but may not be able to locate them.
4. Locating: Child turns to, points to, locates sound sources.
5. Vocalizing with inflection: Child vocalizes with a variety of duration, intensity and pitch.
6. Hearing at distances and levels: Child locates sound far away and above and below.
7. Producing vowels and consonants: Child uses some distinct vowel and consonant sounds.
8. Environmental discrimination and comprehension: Child hears differences among and understands home sounds.
9. Vocal discrimination and comprehension: Child hears differences (a) among vocal sounds (b) among words (c) among phrases and understands them.
10. Speech sound discrimination and comprehension: Child hears differences among and understands speech sounds.
11. Speech use: Child imitates and uses meaningful speech.

The eleven auditory skills are used in the assessment of the Auditory Program. Parents check the *highest* auditory skill level the child is on each week and the parent advisor then records this on the SKI*HI Data Sheet (see page 73).

Auditory activities have been written for all eleven auditory skills. These activities start on page 469).

These four phases and eleven skills of the auditory program encompass 20 sub-skills. Although these sub-skills are not necessarily sequential, they are presented here in list form to enhance clarity. The 20 sub-skills are presented in 20 home visit lessons although more than one home visit may be required per sub-skill. Each sub-skill is written in a parent objective and/or child objective form in each lesson.

Auditory Program Sub-Skills

SKILLS	
PHASE I	
1. Attending	1. Attending to environmental sounds and voice 2. Attending to distinct speech sounds 3. Use of auditory clues, showing source of sound and reinforcement 4. Identification of responses to sound
2. Early Vocalizing	5. Stimulation for and reinforcement of all vocalizations and child activity sounds
PHASE II	
3. Recognizing	6. Recognition of objects and events from sound source 7. Sound as first source of information
4. Locating	8. Locating sound source in space 9. Reinforcement of attempts to localize
5. Vocalizing with Inflection	10. Vocalization varied in duration, intensity, and pitch 11. Tonally expressive speech 12. Speech breathing
PHASE III	
6. Distances and Levels	13. Locating sound source at increased distance and different levels
7. Producing Vowels & Consonants	14. Reinforcement of child's speech attempts and stimulation for vowels then consonants 15. Stimulation with meaningful words
PHASE IV	
8. Environmental Discrimination & Comprehension	16. Discrimination and comprehension of environmental sounds
9. Vocal Discrimination & Comprehension	17. Discrimination and comprehension of gross vocal sounds 18. Discrimination and comprehension of words and phrases
10. Speech Discrimination & Comprehension	19. Discrimination and comprehension of fine speech sounds — vowels
11. Speech Use	20. Discrimination and comprehension of fine speech sounds — consonants

The Auditory Program includes the use of auditory clues, criteria for moving to a higher auditory phase and dealing with children who have total hearing losses. These topics are discussed below.

Auditory clues. Auditory clues are used to encourage the child to listen carefully for sounds. They are devices to "tune-in" a child to sound. Clues constitute such things as baring the ear and cocking the head, pointing to the ear and saying "Listen," holding up a dog's ear or a toy's ear indicating *listen*, covering both ears with both hands, etc. Auditory Phases I, II, and III are always first taught with clues in a quiet background. The child then listens to sounds without clues and then with distraction.

For example, if the child is being taught to localize to the telephone, the skill is first taught in quiet with clues "Listen, Johnny, listen carefully." Second, the sound would be presented without clues. Lastly, Johnny would be involved in normal, daily distractions such as food or toys while the sound was presented. Auditory clues are used with the discrimination and comprehension phase only if the child is not listening and needs clues as a reminder to listen.

Criteria for moving to a higher auditory phase. The parent advisor should evaluate separately the child's use of each skill within a phase. This will help in data recording and will also help the parent advisor determine which phase the child is in, both auditorily and vocally.

Specifically, for Auditory Skills 1 (attending), 3 (recognizing), 4 (locating), and 6 (distances and levels) in Phases I, II, and III, achievement is determined by the child's responding, without auditory clues, to three or more different sound stimuli at a 50 percent or higher consistency level during a series of meaningful presentations of each sound. For example, the child is on the "locating" level if he can localize half the time without clues to three or more sounds (e.g., knocking, his name being called, electrical appliance) during a series of meaningful presentations of each sound (e.g., Mother knocks five times on kitchen cabinet while she is cooking and child responds three times).

For Auditory Skills 8, 9, and 10 (environmental, vocal and speech discrimination and comprehension) in Phase IV, achievement of a particular level occurs when the child is making more than 50 percent of his auditory responses on that level. For example, if most of the child's responses are discriminations of vocal sounds, words, or phrases, the child is on auditory level 9.

For achievement of vocal skills (Auditory Skills 2, 5, 7, and 11), the child should be making the majority (50 percent or more) of his vocalizations on a particular level.

When the parent advisor has determined which auditory and speech skills the child is performing the majority of the time, she can arrive at the child's phase level. At each phase, a time frame is provided as a general guide for how long a profoundly deaf infant will need to meet the goals of that particular phase. To varying degrees, however, each child will progress at his own rate. To determine whether a child has met the goals of a phase, use as a general criterion a 50 percent or higher consistency level in the child's use of the skills in that phase. For example, if 50 percent of his responses to sound without clues are at Phase II, it would be appropriate to assume he has these skills and to initiate Phase III auditory sub-skills. At the same time, the child may still be making the majority of his vocalizations at the Phase I level. It is then appropriate to initiate Phase II speech sub-skills with this child. For reporting purposes, on the SKI*HI Data Sheet, record the highest skill exhibited, whether auditory or vocal.

The child will progress from Phase I, *Attending to Sounds and Voices; Increased Vocalizations,* as soon as he attends to environmental and vocal sounds 50 percent or more of the times these are presented to him and if he demonstrates a significant increase in the number of vocalizations. These are usually nonspecific vowel-like sounds. The infant will be at least 7 months old before moving on to Phase II.

In Phase II, *Recognition of Objects and Events from Sound Source, Locating Sound Source in Space and Vocalization Varied in Duration, Intensity and Pitch,* the child demonstrates the ability to associate environmental and speech sounds with their sources by locating the sound source. At this point he does not have to be able to demonstrate directional hearing to move on to the next level (i.e. right versus left, down versus up). He does *need listening* time, and this can be evidenced by his meeting the speech stimulation goals of producing vocalizations varied in duration, intensity, and pitch.

The same criteria hold for Phase III, *Locating Sound Source in Space at Increased Distance and Different Levels; Vocalization with Distinct Vowel, then Consonant Sounds.* The profoundly deaf child does not have to demonstrate locating at a distance or at levels; however, he does need listening time for developing the ability to listen to himself that is necessary for the production of additional vowels and consonants. The child with more hearing can move ahead as soon as the speech stimulation objectives for parents and child are met.

Reaching the final Phase IV, *Discrimination and Comprehension; Imitation and Meaningful Use of Speech,* may require approximately a year or more of full-time hearing aid usage and auditory, speech stimulation. The child has to be using hearing for the perception of speech (demonstrate attention to differences among environmental sounds, words, phrases, and fine speech) and production of speech (demonstrate imitation and meaningful use of words and phrases). At this phase, the child demonstrates comprehension of words and phrases and uses them meaningfully. He will usually be preschool age.

It is not necessary for the child to respond with distraction to move on to the next phase. However, mild to strong distractions should be provided after the child uses the skill in quiet. Distractions are part of the reality of listening in the real world. For older children or children with mild or moderate hearing losses, it may not be appropriate to begin programming in Phase I. The older child's interest level may dictate a change in criteria for moving to a new phase. Some children may need the auditory objectives of one phase and the speech objectives in another phase. Be flexible and plan for each child's individual needs.

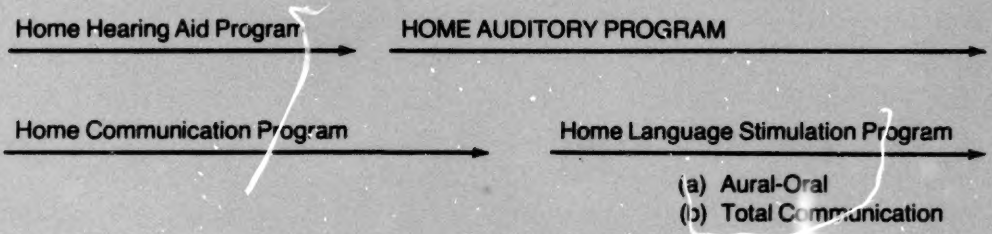
Total hearing losses. The child with a total loss of hearing, who cannot experience auditory sensation, has only the sense of touch for access to sound. Tactile information from wearable amplification can convey time and loudness (intensity) information and thus offer recognition of sounds with characteristic time patterns such as telephone rings or footsteps. For this child, additional approaches to the perception of speech should be offered.

The child without hearing can use touch for manual exploration of the speaker's face. This offers considerable access to speech movements. The child feels air flow (strength, location [nose, mouth] and timing), vibrations of the vocal cords during voicing, vibration of the nose during nasalization of voiced sounds, and movements of the jaw. Touch can be used effectively in a one-to-one situation with the child while the focus is on speech stimulation skills.

Use of Auditory Program in the SKI*HI Model

It is essential that parents learn to communicate with their child while the child is learning to listen. If parents learn how to develop basic communication skills with their child while the child is learning how to listen, they will be encouraging the child's language development. The SKI*HI Communication Program provides strategies for developing communication skills as the auditory program progresses. After the completion of the Communication Program, the Language Program is initiated.

This diagram shows the relationship among the Home Hearing Aid, Auditory, Communication and Language Programs.



General Teaching Suggestions

Where to begin. The first step in the Auditory Program is to observe the child informally while parents and child are doing one or more normal daily activities over the span of at least two home visits. Use this observational information to determine the type of response the infant has to auditory stimuli. Question the parents about their awareness of his response to sound and put this information with the available aided audiological test data. (If further audiological evaluation is needed, request it.) Listen to the infant. Record examples of vocal and speech production skills and determine the stage of development that best describes the infant.

Steps in teaching auditory skills. The teaching of the skills in each auditory phase is based on the concept that the parent advisor models the skill to the parent and then the parent does the skill for the parent advisor. The following six steps are used in teaching the parent the auditory skills:

1. Parent advisor describes the skill and states why it is important. Usually this description involves what sound the parent will use, how to use clues, how to present the sound, what responses to look for in the child, what to do if the child responds, and what to do if the child does not respond.
2. Parent advisor models the skill using the hearing impaired child.
3. The parent demonstrates the skill with the child.
4. Parent advisor reinforces specific things parent does well.
5. Parent advisor and parent discuss the skill, for example, "How did the parent feel about the activity? How would she have done it differently? Where and when can she use the skill during the week?" Use specific times and places.
6. Leave a challenge in writing in the parent's notebook.

It may be necessary for the parent advisor to model the skill, discuss and then challenge without having the parent perform. This would be done if the parent feels particularly awkward about working with the child in front of others. In that case, give the parent the week to practice the skill in the home. At the next session, have the parent demonstrate the skill.

Motivation and reward. Remember, spontaneous responses to sound and spontaneously produced speech sounds need to be enthusiastically reinforced regardless of the order in which they occur. In this regard, it is also important for the parent advisor to help the parent consider motivation and reward. It may be possible to take advantage of the child's internal need to explore or communicate or win approval to motivate the child to acquire new skills. In most circumstances, this is a better approach than manipulating the child's environment to provide external motivation. The same concept is true for the use of rewards. Hopefully, the infant will be rewarded by the satisfaction gained from knowing through audition what is going on around him. Sound should be his cue to people and things he enjoys. Eventually, he will discover that sound gives him power or control over people and events in his life.

Auditory activities. Supplemental auditory activities are given on page 469 for the following lessons: 1, 2, 5, 6, 8, 10, 12, 13, 14, 16, 17, 18 and 19. For the lessons that do not have auditory activities (lessons 3, 4, 7, 9, 11, 15 and 20), use activities from the preceding lesson that has accompanying activities. The parent advisor should become familiar with the activities and use them freely in her presentations of the auditory lessons. The activities are practical and home-oriented and will enable parents and parent advisor to stimulate natural auditory development in the child. The activities are listed according to their appropriateness for various age levels such as birth to 6 months, 6 to 12 months, 12 to 18 months, 18 to 24 months, 24 to 36 months, and 36 months and older. Age increments indicate when the activities may be introduced. They can be continued beyond the ages suggested if the child is still interested. Many of the earlier activities are appropriate for the later ages. The guidelines are not rigid; babies are unpredictable, some will enjoy an activity earlier or later than indicated.

Note: The following page contains common symbols and key words that were referred to in the discussion on page 389.

SYMBOLS AND KEY WORDS

The following are not listed in order of speech production expectations.

Primary Northampton Symbol	IPA Symbol	Dictionary Diacritical Markings	Key Words
h-	/h/	h	had, ahead
wh	/ʍ/	hw	when, everywhere
p	/p/	p	pie, sip, stopped
t	/t/	t	tie, sit, sitting
k	/k/	k	key, back, become
f	/f/	f	fan, leaf, coffee
th	/θ/	t͟h	thin, tooth, nothing
s	/s/	s	see, makes, upset
sh	/ʃ/	s͟h	she, fish, sunshine
ch	/tʃ/	c͟h	chair, such, teacher
w-	/w/	w	we, awake
b	/b/	b	boy, cab, rabbit
d	/d/	d	day, mud, ladder
g	/g/	g	go, log, begged
v	/v/	v	vine, give, every
th	/ð/	t̶h̶	the, smooth, bother
z	/z/	z	zoo, size, lazy
zh	/ʒ/	z͟h	measure, vision
j	/dʒ/	j	jam, edge, enjoy
m	/m/	m	meat, team, camera
n	/n/	n	new, tin, any
ng	/ŋ/	n͡g	song, singer
l	/l/	l	low, bowl, color
r	/r/	r	red, bar, oral
y-	/j/	y	yes, canyon
x			box, taxi
qu			queen, liquid

Vowels

Symbol	*Key Word*
[u]	who
[ʊ]	would
[o]	know
[ɔ]	more
[ɑ]	of
[a]	art
[ʌ]	must
[ɝ]	learn
[ə]	again
[ɚ]	mother
[æ]	and
[ɛ]	then
[e]	take
[ɪ]	his
[i]	ease

Diphthongs

Symbol	*Key Word*
[aɪ]	*pie*
[aʊ]	*cow*
[ɔɪ]	toy
[eɪ]	play
[ɪɚ]	here

Modifiers

[ʰ]	aspirated
[̥]	voiceless
[ˉ]	unreleased
[.]	syllabic consonant

Introduction To Phase I:

Attending To Sound and Voices; Increased Vocalization

This material is not a formal lesson. It is suggested that this information be discussed with parents in conjunction with Lesson 1.

Outline/Parent Objectives

I. Parents will provide repeated opportunities for their child to hear the same sounds many times in similar situations so that he will attend to them and thus the sounds will become meaningful.
   A. Environmental sounds and voice
   B. Distinct speech sounds

II. Parents will model clues to call child's attention to sound, show the source of sound when necessary, and reward the elicited response.

III. Parents will be able to identify child's responses to sound appropriate for his developmental age.

IV. Parents will call attention to all sounds and vocalizations that result from the child's own activities.

Child Objectives

1. Child will demonstrate atending to sound by responding to environmental sounds, voice, and distinct speech sounds first with and then without parental use of alerting clues.
2. Child will produce increased vocalizations.

Materials

1. Naturally occurring environmental sounds and voice
2. Speech sounds produced by parents
3. Any sound produced by the child via voice or his own activity

Discussion of phase I. Discuss with the parents the need for them to help their child become aware of sounds they hear. As in the Hearing Aid Program, the notion of reduced background or competing noise has to be implemented. If the hearing impaired child hears constant *noise* through his hearing aids, it is possible that he will reject them or learn to ignore sounds. The parents can enhance the process of attaching meaning to sound by providing repeated opportunities for their child to hear the same sounds many times in similar situations so that the sounds become meaningful to him.

For the young infant with severe, profound hearing loss, attending to environmental sounds, voice, and distinct speech sounds and producing increased vocalizations will cover at least a 4 to 7 month period *following* the establishment of full-time hearing aid usage. For the older child, progress toward the next phase can be accomplished as soon as the child demonstrates attention to environmental sounds, voice, and distinct speech sounds with and without clues; produces abundant vocalization; and enjoys producing sounds by his own activities. The older child who can display attending behavior may do so infrequently unless motivated with higher level activities.

The ultimate goal is for the child to attend to the speech sounds he will later imitate. The first steps are:

1. Increasing his attention to speech by motivating him to listen to environmental and speech sounds so they will become meaningful and not distractive.
2. Repeatedly attaching speech sounds to meaningful and motivating experiences, increasing his attention to them when he hears them again.

Using the information on the introductory part of the Auditory Program along with observation of the child, help the parents be aware of the type of auditory response their child displays and the level of vocalization ability he has at this point. Then teach the parents the following sub-skills to enable them to expand from here. Remember, even though the 20 sub-skills are listed sequentially and marked as discrete lessons, all the skills in Phase I interrelate and the order of teaching should remain flexible to meet the needs of the individual children.

Lesson 1

Attending to Environmental Sounds and Voice
(Phase I, Skill 1, Sub-skill 1)

Outline/Parent Objective

I. Parents will provide repeated opportunities for their child to hear *environmental sounds and voice* many times in similar situations so that he will attend to them and thus the sounds and voice will become meaningful.

Child Objectives

1. Child will demonstrate attending to sound by responding to environmental sounds and voice first with and then without parental use of auditory clues.

Materials

1. Naturally occurring environmental sounds and voice.

Lesson

Discussion. A normally hearing newborn does not attend to sound, *listening attitude,* until he has experienced repeated opportunities for at least 4 to 7 months. To enhance the hearing impaired child's ability to learn to attend, it is important to increase the number of opportunities he has to attend to sound, to reinforce all responses, and to call his attention to sound whenever he does not respond spontaneously. Tell the parents, "Anytime you are near your child and you hear a sound in your environment, stop what you are doing, use facial expression, point to your ear and say, 'Listen' or 'I hear ________.' Take your child to see the source, and reinforce him enthusiastically for listening."

1. Model this skill for the parents following the six steps outlined in the Auditory Program General Teaching Suggestions, pages 396–397, and enthusiastically reinforce the parent for trying the skill, for doing it correctly, for doing it spontaneously, etc.
2. Discuss the variety of sounds in the child's particular environment such as:

   parent's voice
   singing
   dogs barking
   horns, drums
   water running
   telephone
   doorbell
   sibling crying
   electrical appliances
   buzzers
   knocking
   airplane flying overhead
   dropping objects

3. It may be helpful to actually help the parents discover or rediscover the sounds around them, perhaps by closing their eyes or by thinking about one room or one daily activity at a time, thus increasing the parents' awareness of sounds happening around them. Remember, if the household is constantly noisy, a few quiet during the day need to be arranged such as sibling nap time. At these times the child can be alerted to meaningful sounds. Meaningful sounds may *not* be obvious or loud, so it is important that the parents give the child repeated opportunities to *tune-in* to develop attending skills.

4. Reinforce and encourage the parents to continue this sub-skill and help them recognize the lengthy time factor involved for spontaneous response by the child.

5. In addition to the use of challenges, another strategy that helps some parents acquire consistent use of the skill is to call attention directly to the parents' use of the skill. Use a part or one whole home visit to alert the child to sounds. To determine a baseline, note how many sounds occur naturally and how many the parent points out to the child. For example, 10 sounds occurred, and the parent alerted the child to 4. The baseline is 4/10 or 40 percent. Discuss with the parent, reinforce enthusiastically and challenge the parent to improve. Set a goal of 80 percent, for example, before concluding that the parent has this skill.

Review Questions For Parents

1. How long is it likely to take for a profoundly deaf infant to learn to attend to environmental sounds and voice? (4 to 7 months)

2. How can you increase his attention to sound? (increase the number of opportunities he has to attend to sound; reinforce all responses to sound; call his attention to sound whenever he does not respond spontaneously.)

Sample Challenges

Challenge the parent to utilize the skill during the week by discussing possible challenges and deciding the challenges together. For example:

1. Alert child to mother's and father's voice by using clues and *motherese* skills learned in the communication program.

2. Alert child to all sounds heard in the kitchen.

3. Alert child to all sounds heard before leaving for work, and record the sound source and child's response in the parent notebook.

4. Teach alerting to the babysitter and grandparents.

Notes/Supplemental Information

1. See pages 469–472 for more attending to environmental sounds and voice activities.

2. Have parents record (weekly) child's auditory development on the Auditory Development Checklist.

Lesson 2

Attending to Distinct Speech Sounds
(Phase I, Skill 1, Sub-skill 2)

Outline/Parent Objectives

I. Parents will provide repeated opportunities for their child to hear the same distinct speech sounds many times in similar situations so that he will attend to them and thus the sounds will become meaningful.

Child Objectives

1. Child will demonstrate attending to sound by responding to distinct speech sounds first with and then without parental use of auditory clues.

Materials

1. Speech sounds produced by parents

Lesson

Discussion. Tell the parents, "When you are near your child, provide him with repeated presentation of distinct speech sounds in similar situations. Use facial expressions to call your child's attention, and reinforce him enthusiastically for listening."

Discuss the variety of situations where repeated presentation of speech sounds can be utilized to help the child attend to speech sounds. Give the child every opportunity to hear speech repeatedly in meaningful situations such as: stimulation of *u* with pitch change while stroking the infant's arms from hands to shoulder and legs from feet to hips; say the infant's name with inflection just before picking him up; stimulation with objects that have names which start with *b* such as playing with a toy *b*ear, *b*aby, *b*all, or talking about his *b*lanket or *b*ed.

In vocalizing to the infant, remember the selection of distinct speech sounds is for him to listen to and begin experimenting with vocally. Guide the parents in selecting sounds consistent with the child's *listening age*, aided audiometric data, and vocalization level. Emphasize to the parents the need to give top priority to the use of speech for attending to sound. Involve the parents actively in the selection process. Always remember to incorporate the Communication Program ideas so that parents appreciate from the beginning the communicative significance of speech. Remember:

1. Don't talk incessantly to your child
2. Do use speech to help establish communication
3. Don't talk at your child
4. Do talk with him, take turns, pause, expect him to take his turn (even infants)
5. Do use pitch changes and varied intonation patterns.

Teaching Suggestions

1. Model this skill for the parents. Select one or two sounds according to D. Ling's criteria for order of development of sounds on pages 388–389 of the Auditory Program introduction. Begin with long vowels, diphthongs, then consonants, etc. Use the guide on page 408 which contains sample words for the IPA symbols Ling utilizes.

2. Describe the speech sound(s) to be used giving an example word. Do not expect parents to learn the IPA symbols.

3. Present each of the sounds to the child for at least a two-week period. Emphasize to the parents the time period involved and the fact that this stimulation to listen to distinct speech sounds will continue for a very long time period (usually up to Phase IV when discrimination and comprehension of distinct speech sounds and imitation of speech begins). If all the speech sounds are utilized before reaching Phase IV, repeat some of the sounds again.

4. The distinct speech sounds do not have to be utilized only in isolation. Note the example challenges that follow.

5. When appropriate, utilize this additional strategy: After challenging the parents to do this skill, obtain a baseline the next visit by observing the number of opportunities to do the skill versus the number of times the parent performed the skill. For example, the parent picked up the infant five times during the visit and called his name beforehand three times. Baseline 3/5 or 60 percent. Discuss with the parents ways to remember to do this at every opportunity, reinforce them for trying, and challenge them to increase this activity throughout the week.

Review Questions For Parents

1. Why should most of the attending activities focus on speech? (so that the child can have repeated opportunities to attend to speech sounds in meaningful situations and thus learn to listen to and experiment vocally.)

2. What previously learned communication skill is particularly important to remember? (turn taking, including pausing and *expecting* him to take his turn.)

Sample Challenges

Challenge the parent to implement this skill several times each day in an appropriate manner. For example:

1. Stimulate the child with the vowel *a* (as in father) with pitch change each time you rock him for comfort, for naps and at bedtime.

2. Stimulate the child with the speech sounds *ba* each time you bounce a balloon in the air.

3. Stimulate the child's ability to begin to recognize his name by saying his name with inflection each and everytime before you pick him up.

Notes/Supplemental Information

1. See pages 473–476 for more attending to distinct speech sound activities.

Reference and Reading List

Stovall, D. (1982). *Teaching speech to hearing-impaired infants and children, zero to three years.* Springfield, IL: Charles C. Thomas.

Lesson 3

Use of Auditory Clues, Showing Source of Sound and Reinforcement
(Phase I, Skill 1, Sub-skill 3)

Outline/Parent Objectives

I. Parents will model auditory clues to call their child's attention to sound, will show the source of sound when necessary, and will reward for the elicited response.

Child Objectives

None

Materials

1. Naturally-occurring environmental sounds and voice speech sounds produced by parents.

Lesson

Discussion. Call specific attention to the skills of this objective and help parents increase their ability to use:

1. Auditory clues — so as to enhance their child's attention to sound (decrease use of clues when child begins to respond spontaneously).

2. Showing source of sound — in order to increase their child's ability to attach meaning to sound and enhance spatial orientation.

3. Reinforcement — given immediately after the child attends to sound so that the attending behavior will be repeated.

Teaching Strategies

1. These skills may be acquired at the same time as the skills in the previous lessons (attending to environmental sounds, voice and distinct speech sounds). If this is the case, simply call attention to what the parents are already doing and reinforce them.

Review Questions For Parents

1. Why should you use auditory clues? (enhances child's attention); show the child sources of sound? (increases ability to attach meaning and enhances spatial orientation); reinforce the child? (encourages child to repeat attending to sound behavior)

2. When will you decrease the use of auditory clues? (as soon as child spontaneously attends to sound)

Sample Challenges

Challenge the parents to utilize these specific skills.

1. Clue the child to sound by getting on his eye level, by capturing his attention and saying "I hear that" every time a sound occurs naturally or is presented by parent.
2. Use interesting facial expressions, point to your ear and point to the child's ear during each attending activity.
3. Pick up the child and allow him to try to see all sound used for attending activity.
4. When the child does not spontaneously alert to sound, repeat the sound (when possible), model the appropriate attending behaviors, and repeat the sound again.
5. Reward all attending behaviors by showing pleasure at all the child's attempts.

Notes and Supplemental Information

1. Review communication lesson on reinforcement, pages 325–327.

Lesson 4

Identification of Responses to Sound
(Phase I, Skill 1, Sub-skill 4)

Outline/Parent Objectives

I. Parents will be able to identify child's responses to sound appropriate for his developmental age.

Child Objectives

None

Materials

None

Lesson

Discussion. If parents are having difficulty identifying their child's responses to sound, help them to observe their child and share information from the Auditory Program Introduction (Downs' Index of Infant Auditory Behavior, page 386) as to what type of response to expect. Regardless of the child's chronological age, the expected response will most likely agree with his developmental level.

For example, if the child is two years old and has cerebral palsy, his motor skill level may be consistent with that of a 6-month-old child and thus the expected auditory response would be *listening attitude* and beginning head turn away from *or* toward the source of sound rather than direct localization of sound on all planes as would be expected at age 2.

Teaching strategy.

1. If parents need help with this skill, simply spend time together observing the child and noting the types of responses to sound the child has.

2. If the child is profoundly deaf and it is difficult to observe any responses to sound, be sure to concentrate on sounds most likely to be meaningful and audible (for example, loud, low-frequency sounds like a drum, spoon in a pan, music with a definite low-pitched beat, voice purposely lowered in pitch, large cowbell). Also, be sure the aids are set maximally for the child.

Review Questions For Parents

1. Why is it sometimes difficult to identify a child's response to sound? (response to sound may match developmental age rather than actual age in months and thus not appear as you expect).

Sample Challenges

1. Observe the child during all attending activities and note his responses including stopping of movement and change of facial expression.

2. During the week, keep a record of all attending to sound behaviors such as indicated by searching for sound with eyes.

Notes/Supplemental Information

1. For multiple handicapped infants, astute observation over time is often needed to identify subtle responses to sound. Encourage the parents to observe and to trust their observations.

Lesson 5

Stimulation for and Reinforcement of All Vocalizations and Child Activity Sounds
(Phase 1, Skill 2, Sub-skill 5)

Outline/Parent Objective

I. Parents will stimulate and call attention to all sounds and vocalizations that result from the child's own activities.

Child Objective

1. Child will produce increased vocalizations.

Materials

1. Any sound produced by the child via voice or his own activity.
2. Common objects child can manipulate to produce sound.

Lesson

Discussion. Tell the parents: "Anytime you are near your child and he produces a sound vocally or as a result of activity, use facial expressions, point to your ear, or imitate his sounds to indicate that you hear him."

Help the parents increase their awareness of all the sounds occurring as an integral part of the child's activity as well as all vocalizations (including coos, squeals, and gurgles). Note the different times during the day the infant is most likely to vocalize and when stimulation can naturally occur. Encourage the parents to work toward reinforcement, especially imitation, of all vocalization. Remembering the developmental age of the child, help the parents allow their infant to produce sounds by doing such things as hanging a rope of loud jingle bells across the crib for the child to pull on or a loud, low-pitched wind chime to kick. As the child's motor behavior matures, hang the bell or rattles wherever he likes to pull up to standing or leave pots and lids on the floor for him to bang once he sits alone. Whatever age the child is, base these activities on his interests, curiosity, and motor abilities. Be sure to provide as many opportunities as possible for the child to produce sound himself and reinforce him for doing so.

The amount of vocalizations should increase with stimulation and reinforcement and consistent adequate hearing aid usage. If it does not happen in 4 to 7 months, check whether or not hearing aid usage is adequate for the child to hear himself. Remember the primary emphasis is on abundant vocalization, regardless of its characteristics. Voice patterns (duration, pitch, intensity) cannot be selectively reinforced until vocalizations are freely obtained. Vocalizations are the first step in speech communication.

Teaching strategies.

1. Model this skill for the parents. Reinforce the parents for their attempts and point out how their stimulation and imitation of the child obviously increase the child's vocalizations and pleasure from sound production.

2. If appropriate, use the strategy of observing the parents' opportunities to utilize this skill and compare this to the number of times they actually do it. For example, the child produces 15 vocalizations and/or sounds and the parent reinforces 5. Baseline 5/15 or 33 percent. Discuss, reinforce, challenge to improve.

3. Encourage parents to record examples of their child's vocalizations on the Auditory Development Checklist in the Parent Notebook.

4. This skill should continue on throughout the program. At later times, the parent advisor may need to encourage and/or help the parents to be aware of sounds the child makes vocally and in activities as well as to provide new opportunities for him to enjoy making sound.

5. Some parents may need outside information for activities that are stimulating for their child's age. See *Reference and Reading List* under this objective for one possible source.

6. Have the parents find new opportunities for their child to produce sounds. *The activities they think of themselves are the ones most likely to be repeated.*

Review Questions For Parents

1. Why is it so important to stimulate and reinforce your child's vocalizations? (to increase the amount of vocalizations regardless of how they sound, since a lot of practice is needed in the first step of speech communication; to help the child learn to hear and attend to his own voice)

2. Why do you want to provide your child with opportunities to produce sound? (so he can learn to enjoy making sound)

Sample Challenges

Challenge the parent to utilize this skill every day. Plan together appropriately for the child's age and interests. For example:

1. Reinforce the child's vocalizations by imitating them with pitch change and facial expression.

2. Reinforce the child's vocalizations by recording them on tape and playing them while he is alone in his bed.

3. Reinforce the child's spontaneous production of sound by saying "I hear you" each time he rings his bells over his crib.

Notes/Supplemental Information

1. The goal of Phase I is to greatly increase the total amount of vocalizations per day. Characteristics of vocalizations in this phase typical for a profoundly deaf infant may include: (a) only one or two vowels, (b) total amount per day and on any one occasion is limited to, for example, two seconds and then absent for a considerable period, (c) pitch is very limited in range, (d) sounds are short, one sound per breath.

(adapted from A. H. Ling. (1977). Schedules of development in audition, *Speech language communication for hearing impaired infants and their parents*, A.C. Bell Association)

Remember the total amount of vocalizations needs to be increased before reinforcement for voice patterns or sound is attempted. Speech breathing will be addressed in Phase II.

2. See pages 477-482 for activities on stimulation and reinforcement of all child vocalizations.

Reference and Reading List

Chase, R. A., Rubin, R. R. (1978). *You and your baby. The first wondrous year.* New York: Johnson and Johnson Child Development Publication, Collier Books, MacMillan. (Also *Your toddler and your preschooler* by the same publisher.)

Introduction To Phase II:

Recognizing Objects and Events From Sources and Locating Sound Sources in Space; Vocalizing With Varied Duration, Intensity and Pitch

This is not a formal lesson. It is suggested that this material be presented to the parents in conjunction with lesson 6.

Outline/Parent Objectives

I. Parents will provide repeated meaningful opportunities for their children to associate environmental and speech sounds with their source.

II. Parents will provide repeated meaningful opportunities for sound to be the first source of information for their child.

III. Parents will provide repeated opportunities for their child to locate environmental and speech sources with and without clues in quiet and then in the presence of background sounds.

IV. Parents will reinforce all their child's attempts to localize sound source.

V. Parents will provide repeated stimulation for varied voice patterns by modeling duration, intensity and pitch changes.

VI. Parents will use and encourage the use of tonally expressive speech.

VII. Parents will provide stimulation for maintenance of a steady breath flow and for production of a pulsed breath stream.

Child Objectives

1. Child will demonstrate recognition of environmental and speech sounds by knowing/realizing their source.
2. Child will demonstrate directional hearing by directly localizing sound sources in space with and without clues.
3. Child will produce voice patterns varied in duration, intensity, and pitch.
4. Child will develop awareness of the breath stream.

Materials

1. Naturally occurring environmental sounds and voice speech sounds produced by parents and child.

Discussion of phase II. Discuss with the parents the idea that the exposure of their child to voice and distinct speech sounds repeatedly in similar situations has helped him attend to and focus on the features of sound and to ignore *noise*. This attending sets the stage for the ability to recognize the source of sound. Now the parents need to give their child many opportunities to associate sound with motion, touch, and visual information and thus learn to *recognize* sound.

Encourage the parents to continue helping their child generate sound as this is one of the most effective kinds of association. When the child bangs a pan with a spoon, or perhaps kicks a wind chime in his crib, moving, feeling, seeing, and hearing all occur at the same time. When the child vocalizes, he can associate movement, touch, and hearing to form associations and thus recognition of his own speech.

Indicate to the parents that recognition (meaningful association of sound with its source) and direct localization of sound source on all planes (right, left, up, down) do not occur in the normal hearing infant until after 9 to 16 months of *practice* or listening time. For the older child or child with only moderate hearing loss, this stage may be passed through more quickly. It is important to understand that a child does not have to be able to demonstrate direct localization of sound, directional hearing, in order to progress on to a higher phase. For example, a child *does* have to be able to recognize the doorbell sound by realizing or knowing someone is about to come in. He does *not* have to be able to directly locate the bell sound as being on his right, left, up, or down. The child who stops fussing upon hearing his food being prepared is demonstrating recognition of the sound source without necessarily demonstrating direct localization of the sound source in space.

In addition to these new listening skills, it is important to take advantage of the child's increased vocalizations and pleasure from sound production brought about by the parents' consistent stimulation and reinforcement of the child's vocalizations over the past several months. During Phase II, speech stimulation should result in the child being able to prolong vowels, vary voice between loud and quiet, utilize variations in pitch and gradually increase the number of speech sounds in vocal play. In addition, the child will develop an awareness of the breath stream.

Lesson 6

Recognition of Objects and Events from Sound Source
(Phase II, Skill 3, Sub-skill 6)

Outline/Parent Objective

I. Parents will provide repeated meaningful opportunities for their child to associate environmental and speech sounds with their source.

Child Objective

1. Child will demonstrate recognition of environmental and speech sounds by knowing/realizing their source.

Materials

1. Naturally-occurring environmental sounds and voice.

Lesson

Discussion. Review with the parents the sounds you have been utilizing for attending. Continue these activities, insuring the child is aware of the source of sound and that the sounds are relevant to the child.

Teaching strategies.

1. Recognition of objects and events from sound source should occur naturally as a result of the attending behaviors established in Phase I and developmental maturation. If a child is attending to sound but not recognizing its source after enough listening time has elapsed, the possibility of a problem other than peripheral hearing loss should be considered.

Review Questions For Parents

1. Why is it important to help your child associate sound with movement, touch and visual clues? (so he will come to recognize objects and events from their sound source)

Sample Challenges

1. Stimulate association of speech sounds with their source by holding the child in front of a mirror (big enough to see both you and the child) and naming him and yourself. Use touch by touching the child's hand to his and your image.

2. Encourage the child to discover different sounds toys make by providing him play time with several different sound toys he likes.

3. Stimulate the child to produce sounds by helping him manipulate objects (banging pans, etc.) and stimulate vocalization by making sounds as you play with the objects. Place the object close to your mouth if need be to obtain the child's attention to your speech.

4. Imitate the child's actions, such as shaking a rattle, and imitate all vocalizations.

5. Associate speech with all big movements; for example, by saying "roll" each time you roll the child over and "up" each time you pick him up.

6. Stimulate association of particular voices with particular people by ensuring that each person who interacts with the child does so accompanied by speech.

Notes/Supplemental Information

1. See pages 483–485 for more activities to help the child recognize objects and events.

Lesson 7

Sound As First Source of Information
(Phase II, Skill 3, Sub-skill 7)

Outlne/Parent Objective

I. Parents will repeatedly utilize sound as the first source of information for their child.

Child Objective

1. Same as previous objective: Child will demonstrate recognition of environmental and speech sounds by knowing/realizng their source.

Materials

1. Naturally-occurring environmental sounds and voice.

Lesson

Discussion. Explain to parents that another way to help young children make auditory associations is to provide many meaningful opportunities for sound to be the first source of information. For example, before walking into the child's room, they can talk loudly so they can be heard before they are seen. When it is feeding time, they can make conspicuous sounds during the preparation before giving him the food. Parents should be sure to follow each of these auditory events with showing the child the source of sound and/or repeating the sound in his line of vision. After enough exposure, the child will become aware of what is making the sound as soon as it is heard. Remember the word *meaningful*. All of the recognition and association activities must be for a good reason; they must be relevant; otherwise, the child will learn to ignore the sounds.

Teaching strategies.

1. If parents are constantly "testing" just to see if their child will hear, stop now and channel this energy into meaningful events for the child.

2. Observe the parents and be sure they *follow up* each event where sound is the first source of information by showing the child the source of sound.

Review Questions For Parents

1. Why do we want to make sound the first source of meaningful information for your child? (to help him make auditory associations with meaningful events and thus recognize the source of sound)

2. Why should we use only meaningful events relevant to his daily life? (so that he will have reason to attend to the sound rather than learn to ignore it)

Sample Challenges

Discuss with the parents daily events that *recur* consistently each day and plan to precede each with meaningful speech and/or specific environmental sounds. For example:

1. Talk loudly before entering the child's room.
2. Call out the child's name just *before* picking him up 100 percent of the time.
3. Make obvious cooking sounds just before feeding the child.
4. Consistently knock loudly on the door before opening it.

Lesson 8

Locating Sound Source in Space
(Phase II, Skill 4, Sub-skill 8)

Outline/Parent Objective

1. Parents will provide repeated opportunities for their child to locate environmental and speech sound sources with and without clues in quiet and then in the presence of background sounds.

Child Objective

1. Child will demonstrate directional hearing by directly localizing sound sources in space with and without clues.

Materials

1. Naturally-occurring environmental sounds and voices.

Lesson

Discussion. Describe this skill to the parents and the sounds to utilize (naturally-occurring sounds or produced sounds). At first parents should utilize only sounds their child attended to in Phase I—sounds parents feel sure the child hears. Only after the child has demonstrated localization should new sounds be introduced. Remember to make all the sounds meaningful and relevant to the child.

It may help to outline the skill for the parent in the following manner, modeling the skill as you go through the steps.

"**Step one: Use clues.** Tell your child to listen. Point to your hear or the child's ear. Cock your head. Pull your hair away from your ears, etc. In subsequent sessions you will learn to teach the child locating without clues. After the child can turn to a sound source without clues, the next step of locating a sound source with distraction will be introduced.

Step two: Present Sounds. Use naturally-occurring and presented sounds within close range of the child (preferably at ear level). Do not let the child see the sound source.

Step three: Observe child's responses. Child's responses may include turning to sound or otherwise locating source (running to sound source).

Step four: Reinforce. Reinforce child. Show child the sound source (physically take the child to the source when appropriate).

Step five: Prompt if necessary. Call attention to the sound source or person speaking by pointing, bringing the sound source into visual range, giving the child the sound source, or taking the child to the sound source. If these fail to direct his attention, gently turn the child's head toward the sound. Then repeat the sound, if possible, while he is looking and prompt again."

Have the parents practice these steps several times. Praise their attempts and help them improve where necessary.

Teaching strategies.

1. Remember localization should be taught in this sequence: (a) with clues (in quiet), (b) without clues (in quiet), (c) with naturally occurring distractions (background noise, while playing or eating, etc.). For most parents, it may be easier to actually break these into three separate lessons as the child progresses from one step to the next. Model the five steps above when you move to localization without clues and again for distractions if indicated.

2. The developmental level of the child definitely affects his ability to localize sound in space. Most of the *expected responses* (turning in the correct direction, pointing) may occur only after much modeling of localization by the parents.

Review Questions For Parents

1. What sounds should be utilized for localization? (only sounds we know the child hears until he demonstrates the localization skill; then new sounds can be introduced)

2. Why is it important to show your child all the sounds utilized for localization (as reinforcement or as a prompt)? (otherwise it would not be a meaningful activity)

Sample Challenges

1. Use the clue of pointing in the direction of the sound to stimulate the child to localize door knocking.

2. Be aware of competing background sounds; try to eliminate them when possible and reward the child for all localization responses.

3. When the child does not localize to sounds, physically take the child to the source of sound and present it again if possible.

4. Stimulate localization of speech by having a family member call the child and then help him turn toward the family member. The family member will then reinforce the response enthusiastically.

5. Make *moo* sound with exaggerated intonation for a toy cow out of the child's vision and then repeat in his line of vision if he does not localize. (Also *meow*-cat or whatever toy animals the family happens to have. Let the parent decide on the sound to make for the animal.)

Notes/Supplemental Information

1. Auditory space perception is discussed in the Cognition Program (available from SKI*HI Institute). That information should be tied into these lessons whenever possible.

2. Studies reveal that directional hearing enhances auditory development by improving alerting, attention, and separation of meaningful sound patterns from noisy background (auditory figure-ground) abilities.

3. Binaural amplification is essential for this skill. The child must have two different hearing aid microphones separated in space.

4. Use of an FM unit will distort the child's spatial perception of sounds coming through the speaker's microphone and should be utilized with caution during localization activities.

5. See pages 487–490 for more localization activities.

6. Remember many severely hearing impaired children never develop true localization or directional hearing ability, and it is not an essential skill. It is essential that the child demonstrate recognition of speech sounds and environmental sounds by knowing/realizing their source.

Lesson 9

Reinforcement of Attempts to Localize

(Phase II, skill 4, Sub-skill 9)

Outline/Parent Objective

I. Parents will reinforce all of child's attempts to localize source.

Child Objective

None

Materials

None

Lesson

Discussion. Renforcement plays a critical role in helping the child to acquire a new skill. Discuss the type of reinforcement the parents feel is appropriate for their child, is liked best by their child, and feels comfortable to them. Model the skill for the parent, being sure to provide reinforcement immediately following the child's spontaneous or prompted localization response. Practice the skill with the parents until they are comfortably giving reinforcement (animated facial expression, touch, clapping hands) as part of the localization activity.

Teaching strategy.

1. Many parents will spontaneously utilize reinforcement effectively just from watching the parent advisor model the skill. If this is the case, reinforce the parents for a job well done by briefly verbalizing what they are doing correctly.

2. If parents need help using reinforcement effectively, spend one home visit being sure to utilize reinforcement consistently and effectively.

Review Questions For Parents

1. What is the best reinforcement for your child? (whatever the child likes best)

Sample Challenges

1. Reinforce all the child's localization responses by smiling and indicating pleasure 100 percent of the time.

2. Reinforce localization responses by giving the child the sound source (where possible) and encouraging him to repeat the sound.

Notes/Supplemental Information

1. Review Communication Lesson No. XI (pages 325–327) for more information on reinforcement.

Lesson 10

Vocalization Varied in Duration, Intensity, and Pitch
(Phase II, Skill 5, Sub-skill 10)

Outline/Parent Objective

I. Parents will provide repeated meaningful stimulation for varied voice patterns by modeling duration, intensity and pitch changes.

Child Objective

1. Child will produce voice patterns varied in duration, intensity, and pitch.

Materials

1. Speech sounds produced by parent and child vocalizations.

Lesson

Discussion. Describe this skill and relate it to the Communication Program skill *Motherese* (see pages 317–320). If parents already have the skill of vocalizing with varied pitch, reinforce their use of it. Discuss (and demonstrate) duration and intensity variations and the important role they play in speech stimulation. Model the use of one of the three variations with every interaction you have with the child so that the parent sees how it can be done spontaneously and consistently. Also describe how the parent can use varied pitch or duration or intensity while stimulating for attention to distinct speech sounds (see Lesson 2, pages 403–405). Continue to select distinct speech sounds from D. Ling's criteria for order of development of sounds on pages 388 and 389. Continue selecting one or two sounds for use over at least a two-week period.

Teaching strategy.

1. Model the use of variations in duration, intensity and pitch. Reinforce the parents for their attempts and point out how their varied vocal patterns enhance their child's attention to their voice.

2. If appropriate, use the strategy of observing the parent's opportunities to utilize this skill versus the number of times they actually do it. For example, the parent uses speech stimulation 10 times but utilizes interesting voice pattern variations only 5 times. Baseline 5/10 or 50 percent. Discuss, reinforce the parents' progress and challenge them to use varied pitch (or intensity or duration) 100 percent of the time.

3. Have the parents record examples of the child's vocalizations and indicate the child's use of varied voice patterns. Together with the parents, listen to the child at least once a month and

record examples in the Parent Notebook. Help the parents realize that the child will need a lot of listening time and will need to produce a significant number of vocalizations over time before he will be able to produce the varied voice patterns himself.

Review Questions For Parents

1. How can you stimulate your child to use pitch, intensity and duration variations in his vocalizations? (by modeling them repeatedly in meaningful situations)

Sample Challenges

1. As you bounce the child on your knee, say *p,* as in putt, with varied intensity for each size bounce (or duration varied for length of bounce, or pitch varied for height of bounce, etc.).
2. While walking your baby, repeat *ba* with duration varied for each series of step(s).
3. While playing with the child's favorite toy airplane, make the sound *er* with varied pitch matching your flight pattern.
4. Vary the length of "mmm... good" with various amounts of time taken to get your feeding spoon from baby dish to child's mouth.

Notes/Supplemental Information

1. Be sure the parents are utilizing this skill throughout the entire day. It will not be effective if used only once or twice each day. Help the parents think of daily situations that repeat themselves so that stimulation occurs for a few seconds many times each day.
2. See pages 491–493 for stimulation activities for vocalizations varied in duration, intensity, and pitch.

References and Reading List

Ling, D. (1976). *Speech and the hearing impaired child: Theory and practice*. Washington, D.C.: A. G. Bell Association for the Deaf.

Stovall, D. (1982). *Teaching speech to hearing impaired infants and children, zero to three years.* Springfield, IL: Charles C. Thomas.

Lesson 11

Tonally Expressive Speech
(Phase II, Skill 5, Sub-skill 11)

Outline/Parent Objective

I. Parents will use and reinforce their child for the use of tonally expressive vocalizations and speech.

Child Objective

None

Materials

None

Lesson

Discussion. Describe the importance of reinforcing vocalizations resulting from all different mood situations (angry, sad, etc.). Describe to parents that changing moods are reflected in the voice for these different situations. Encourage the parents to provide an emotionally rich environment that will provide a basis for spontaneous vocalization in all situations. Reinforcing vocalizations from varied situations will help the child gain experience necessary for future speech goals. Model the skill for the parent, being sure to refect the mood via intonation as well as facial expressions. Have the parents copy your example and help them to feel relaxed about openly expressing changing expression.

Teaching strategies.

1. It is difficult to model this objective except in naturally-occurring situations. Be alert to activities going on in the home (sibling hurt or angry or sad) and model vocalizing about these events with intonation patterns reflective of the mood at the moment. Or each time the hearing impaired child is angry (because he's hungry) or sad (because a parent left the room), model a tonally expressive response reflecting the child's mood.

Review Questions For Parents

1. How can you help your child attend to the aspects of speech that reflect mood? (by vocalizing about daily situations where feelings are involved and using the voice to reflect the mood)

Sample Challenges

1. Stimulate the child's association of particular intonation patterns with particular emotional states by conveying in the tone of your voice, whatever you feel such as sadness, happiness, fear, anger, etc.

2. Reinforce the child's vocalizations when he feels sad about your leaving by saying, "I'm sad too," with th appropriate tone quality.

3. Reinforce the child's calm quiet vocalizations during play by getting his eye contact and smiling or perhaps nodding approval (without seriously interrupting his play).

4. Reinforce the child's "shriek" vocalizations when he accidentally topples over (or any accident) by hugging him and saying, "It hurts" or "Ouch" with appropriate tone quality.

Reference/Reading List

Boothroyd, A. (1982). *Hearing impairments in young children.* Englewood Cliffs, N.J.: Prentice Hall.

Pollack, D. (1970). *Educational audiology for the limited hearing infant.* Springfield, IL: C. C. Thomas.

Lesson 12

Speech Breathing
(Phase II, Skill 5, Sub-skill 12)

Outline/Parent Objective

1. Parents will provide stimulation for maintenance of a steady breath flow and for production of a pulsed breath stream.

Child Objective

1. Child will develop awareness of the breath stream.

Materials

1. None necessary (activity section, pages 495–496 lists materials for blowing activities).

Lesson

Discussion. Discuss the ideas that breath control is essential to speech and that speech breathing is different than quiet breathing for respiration. A skilled speaker is able to inhale rapidly, usually through the mouth, using the diaphram; then exhale slowly and steadily, conserving the breath stream as it is modified by the tongue, teeth, lips, and jaw with and without voice.

Hearing impaired children need use of a substantial breath stream and good voice patterns before individual speech sounds can be taught in therapy sessions. Remediation of inadequate speech breathing is difficult for hearing impaired children at later ages because poor habits have been established, and it seems that attempts to correct poor speech breathing may add to a child's speech problems. Allowing the child to develop awareness of the breath stream during natural home activities will do much to avoid the abnormal speech breathing dynamics that many hearing impaired children display. Indicate it is important to stimulate the child to: (a) maintain a steady breath flow for continuous vocalization, and (b) produce a pulsed breath stream.

Emphasize these two skills are not met by blowing exercises but rather by the parents modeling control of their breath streams while *not* requiring the child to imitate. The child will develop awareness of the breath stream. Speech breathing should be modeled in a relaxed setting by relaxed parents as tension greatly contributes to incorrect speech breathing and future voice problems.

Teaching strategies.

1. The activities suggested here (under sample challenges) and in the activities section (pages 495–496) are designed to help prevent future problems. The activities should be continued throughout the remainder of the program with adaptations appropriate for the child's age and developmental level.

2. Model a new speech breathing activity for the parents intermitttently in combination with future skills.

Review Questions For Parents

1. Why does your child need to become aware of his breath stream? (because breath for speech is different from breathing for respiration, and remediation for inadequate speech breathing is very difficult since bad habits are hard to change)

2. Why is it essential that you remain relaxed during all speech breathing activities? (so the child will not pick up any tension and associate it with breathing)

Sample Challenges

1. Lay the child on your stomach while relaxing on the floor or bed, letting your child feel the movement of proper breathing while you vocalize with varying duration.

2. Let the child feel the force of your breath stream by putting your cheek next to the child's during vocalization of varying duration up to at least five seconds in length.

3. Increase the child's awareness of a pulsed breath stream by putting his hand on your mouth while chanting like an Indian.

Notes/Supplemental Information

1. It is widely recognized that hearing impaired children's speech breathing problems are due to lack of control in the emission of breath during speech, and not to inadequate lung capacity or blowing skill.

2. The third target behavior for speech breathing (in addition to a steady breath flow for vocalization and a pulsed breath stream) is the organization of intake and expenditure of breath in relation to the structure of the utterance. Only the two discussed in this lesson are recommended for home programming.

3. Although it is difficult to find age related references for breathing, Caplan and Caplan (1977) state that most 16-month-old infants are able to blow out matches and blow bubbles with a straw. Blowing through a straw may have begun as imitation with the toddler copying an older sibling sipping a beverage. Once the toddler can blow, he will continue to blow just because it is fun. Toddlers do not make much of a distinction between the functions of mouth and nose and the 16-month-old may blow on a flower when asked to smell it.

4. The parent may naturally begin to involve the child in simple blowing activities before 16 months (such as blowing out a birthday candle), but should not be distressed if the child does not begin to imitate. Keep it playful, and the child will continue to participate because it is fun.

5. See pages 495–496 of the activities section for more speech breathing ideas.

Reference/Reading List

Caplan, F. and Caplan T. C. (1972). *The second twelve months of life: your baby's growth month by month*. New York: Bantam Books.

Ling, D. (1976). *Speech and the hearing impaired child: Theory and practice*. Washington, D.C.: Alexander Graham Bell Association for the Deaf.

Introduction To Phase III

Locating Sound Sources in Space at Increased Distances and at Different Levels; Vocalizing with Distinct Vowel, Then Consonant Sounds

This is not a formal lesson. It is suggested that these materials be discussed in conjunction with Lesson 13.

Outline/Parent Objectives

I. Parents will provide repeated opportunities for their child to locate environmental and speech sounds at increasing distances and at different levels in quiet, with and without clues, and then in the presence of distraction.

II. Parents will consistently show pleasure at their child's speech attempts and provide stimulation of vowels and then consonants.

III. Parents will provide meaningful words for the sounds spontaneously produced by their child.

Child Objectives

1. Child will demonstrate directional hearing at increasing distances and at different levels by localizing the sound source in space with and without clues.

2. Child's varied vocalizations will increase in number, and he will begin to spontaneously produce additional vowel and consonant sounds.

Materials

1. Naturally-occurring environmental sounds and voice
2. Speech sounds produced by parents and child

Discussion of Phase III. As the infant develops crawling and/or walking, his sense of space is greatly enhanced. His memory for places and things develops rapidly, and the normal hearing infant will begin to search for sounds coming from the side, below, above, and from greater distances. For the profoundly hearing impaired child, these skills need to be modeled consistently with the realization that they may not occur quickly. Again, a child does *not* have to be able to demonstrate localization, directional hearing, at varying distances and levels in order to progress on to a higher auditory level. These skills can be continually worked on throughout the entire auditory program.

Discuss with the parent that their infant has now had a great deal of *experience* producing undifferentiated vocalizations and is utilizing variations of duration, intensity and pitch in these vocalizations. This suggests that the child is beginning to hear himself. He is ready to be stimulated for distinctly different sounds, vowels first, then consonants. Do not expect him to imitate the sounds, unless he is old enough and willing to vocalize on demand.

Reinforce all parent skills from the previous phase. Tell the parents they will continue doing all of these activities, gradually increasing the distance and changing the levels above or below the child.

Reinforce the speech stimulation skills the parents have acquired. Tell the parents how their child is beginning to utilize hearing for the perception of speech; he attends to the sounds of speech, recognizes speech as originating from people, recognizes important people from the sounds of their voices and responds to the emotional content of speech. Also indicate that the child is beginning to use his hearing to control the production of speech. This is often first observed by noting that the child vocalizes when the hearing aid is put on and then by the child's variations in pitch, duration and intensity. Now in Phase III, vocalization of speech sounds (vowels then consonants) should occur. Remember, as with locating sound sources and associating meaning with sound, *all* speech sounds can and should be utilized. Reinforce and provide meaningful vocabulary for all speech sounds spontaneously produced by the child.

Lesson 13

Locating Sound Source at Increased Distance and Different Levels
(Phase III, Skill 6, Sub-skill 13)

Outline/Parent Objective

1. Parents will provide repeated opportunities for their child to locate environmental and speech sounds at increasing distances and at different levels in quiet and then in the presence of distraction.

Child Objective

1. Child will demonstrate directional hearing at increasing distances and at different levels by localizing the sound source in space with and without clues.

Materials

1. Naturally-occurring environmental sounds and voice
2. Speech sounds produced by parents and child
3. Vocal or activity sounds produced by the child

Lesson

Discussion. Describe the skills to the parent and the sounds to utilize (naturally-occurring and/or produced sounds). At first use only sounds to which the child is known to localize. Once he can do the skill at increased distances and levels, gradually introduce new sounds. The sounds need to be meaningful and relevant in order to motivate the child. Take advantage of his interests.

It may be helpful to outline the skills for the parents in the following manner, modeling the skill as you go through the steps. Pick either distance or levels.

Localization at increasing distance.

"**Step one: Use clues.** Tell your child to listen. Later on, see if your child can respond without clues and then with distraction.

Step two: Present sounds. Start at distances fairly close to your child such as three to four feet. Gradually increase the distance between the sound source and your child. Move the sound source into adjacent rooms. If outdoors, have the sound originate from across the yard or across the street.

Step three: Observe child's response. Child responses could include head turning to sound, child running to sound source, or child pointing to sound source.

Step four: Reinforce. Reinforce; show your child the sound source.

Step five: Prompt if necessary. Call attention to the sound source or person speaking by pointing, bringing the sound source into visual range, giving your child the sound source or taking your child to the sound source. If these fail to direct his attention, gently turn his head toward the sound. Then repeat the sound if possible while he is looking and prompt again."

Localization at different levels. Describe the skill to the parent and the sounds to use. Include naturally-occurring and parent-produced sounds (sibling voice from the floor while child is in the high chair, voice of standing parent while child is on the floor, airplanes, birds, clocks up on wall, pan dropped on floor, sibling knocking on a high window, parent calling out from the basement, etc.). Use the following discussion if helpful.

"**Step one: Use clues.** Tell your child to listen and point to his ears. At subsequent sessions, teach without clues and then with distraction.

Step two: Present sounds. Have your child begin by sitting slightly above or below the sound (example: child sits on a table or shelf; parent sits below table or shelf with sound source). Move quickly to presentation of sounds at increased levels such as having a brother hammer or turn on the TV in the basement. Before brother presents the sound, give your child upstairs the clue to listen.

Step three: Observe child's response. Child responses may include child turning head to source or pointing to source or running up or down to source.

Step four: Reinforce. Reinforce; show child sound source.

Step five: Prompt if necessary. Turn child's head to source or in some way show your child the source. Repeat the stimulus. If there is still no response, decrease the distance between the sound and your child."

After describing this skill, practice listening for distant sounds and/or sounds on different levels. Then select one skill (distance or levels) and one sound that the child *can* already localize and practice the five steps of the skill with the parent. Or have the parent think of all the sounds that naturally occur at varying distances and levels, perhaps starting a list. Then challenge the parent to do the skill during the week and observe/record more possibilities for future use.

Teaching strategies.

1. Localization at increasing distance and different levels should be taught in this sequence: (a) with clues (in quiet), (b) without clues (in quiet), (c) with naturally-occurring distractions. If indicated, model the five steps of the skill for each of these situations.

2. Be sure to model physically carrying or taking the child to the sound source where possible (particularly important for multiply handicapped children) so as to enhance their awareness of space.

3. It is all right to contrive some of the sounds utilized as long as they are relevant and meaningful to the child and/or the activity takes advantage of the child's interest. *However, the majority of sounds utilized should be speech and naturally-occurring environmental sounds.*

Review Questions For Parents

1. Why do the sounds utilized for localization at increasing distances and different levels have to be meaningful and relevant to the child? (to motivate him to listen rather than ignore sounds)

2. Why should these skills first be practiced in a relatively quiet situation? (as indicated in the Hearing Aid and Communication Programs, the child has to have speech signficantly louder than background sound in order for it to be fully heard)

Sample Challenges

1. Use the same challenges as in Lesson 8 (locating) adding "at increased distances" or "at different levels."

Notes/Supplemental Information

1. If the program is being utilized with a child who is unable to locate sound source in space, there would be no need to attempt to teach localization at increased distances or different levels. It is worthwhile to stimulate the child *to attend to and recognize* sounds at increasing distances. It is important to cover the other skills in Phase III and to give the child more listening time to develop the recognition skills of Phase II.

2. It is important at this point to consider the disadvantages of FM utilization. If the infant and parents are utilizing one of these units, remember to alert the parents to the fact that their child may be exposed to sounds that have no relevance to his immediate experience. Care must be taken to ensure sounds are meaningful and that auditory attention develops. FM units can provide confusing information about the spatial relationship between the child and the sound source as all sounds coming through the speaker-worn microphone will sound as though they are no more than 6 inches from the child.

3. See pages 497–500 of the Auditory Program Activities section for more distance and levels ideas.

Lesson 14

Reinforcement of Child's Speech Attempts and Stimulation for Vowels, then Consonants

(Phase III, Skill 7, Sub-skill 14)

Outline/Parent Objective

I. Parents will consistently show pleasure at their child's speech attempts and provide stimulation of vowels.

Child Objective

1. Child's varied vocalizations (varied in pitch, duration, intensity) will increase in number, and he will begin to spontaneously produce additional vowel and consonant sounds.

Materials

1. Vocalizations produced by the child and parent
2. Common toys in the home

Lesson

Discussion. Discuss the importance of consistently showing pleasure at the child's vocalizations. Encourage the parents to continue to stimulate and reinforce duration, intensity and pitch variations. Indicate to the parents the important role the vowel system plays in good speech production. (The production of good consonants follows the production of good vowels.) As the parents stimulate for vowels, they will begin by using long vowels and diphthongs (blend of one vowel sound into another). Indicate vowels will often be paired with consonants. While in this stimulation process, listen together with the parents for the child's ability to: (a) babble (produce sounds repeatedly, e.g., *bʌ*, *bʌ*, *bʌ*) (b) make different speech sounds and (c) alternate these patterns (example *gʌ*, *bʌ*. *gʌ*, *bʌ*).

Model the skill of stimulation of vowels, for example, by imitating a sound the child makes and then laughing or clapping. Then pick a new sound (/a/, /i/, /u/, /aʊ/, /aɪ/, /ɔ/, /ɔɪ/, /o/, /e/) the child has not used, say it and then laugh or clap. He may imitate this new sound.

Discuss and list with the parents the vowels and diphthongs their child already produces. Use the information in the Auditory Program Introduction, pages 388–389, on the order of production of sounds, gradually introducing new sounds. Select no more than one or two sounds every two weeks. The goal is to increase the child's range of vocalization and babbling, remembering that a young infant will be able to spontaneously produce the sounds *before* he is able to imitate them. If appropriate, work directly on having the child imitate the parent, selecting sounds the child can already produce first. Then, once he is imitating them, introduce new sounds.

Teaching strategies.

1. Avoid using distracting materials to get speech skills.

2. Parents can increase the possibility of spontaneous or imitative vocalization if they simultaneously engage the child in a general motor activity such as "round and round" when coloring or "up, up, up" when climbing stairs or "down" when the child gets down.

3. Observe the parents' spontaneous use of this skill and challenge them to help plan more activities appropriate for their child. Also challenge the parents to reinforce all of the child's speech attempts.

4. Listen to the child's vocalizations over several visits and/or make a tape recording of at least 50 utterances. Keep an up-to-date growth chart of speech sounds the child produces. Ling (1976) suggests that, if a child uses a speech pattern at least twice during the 50 utterances, you can assume the pattern has been acquired for the time being.

5. If the child is not beginning to produce some of the sounds, be sure to provide sound stimulation *frequently* throughout the day for a significant length of time (at least several weeks). Be sure the sounds are meaningful for the child.

Review Questions For Parents

1. In addition to reinforcement, what other reason do we have for imitating your child's vocalizations? (if we imitate him, he will imitate us; then we can stimulate him with new sounds and thus increase his number of speech sounds)

Sample Challenges

Challenge the parents to utilize this skill every day. Plan together activities appropriate for their child's age and interests. For example:

1. Stimulate for /i/ (as in be) by producing the sound each time the child puts a spoon in a pan and each time he takes it out, with changes in pitch to match movements. Do at least three times each day.

2. Stimulate for /aɪ/ (as in my) by saying the sound into the child's toy telephone receiver and then giving him the phone and a chance to imitate. Do at least twice daily.

3. Stimulate the vowel /ɔ/ (as in law) by producing /ɔ/ as you and the child draw with crayons daily.

4. Enthusiastically reinforce all of your child's speech attempts.

Notes/Supplemental Information

1. Remember the objective is to have the parents consistently reinforce all speech attempts and repeatedly stimulate the child with new speech sounds, vowels then consonants. The objective is *not* direct speech therapy with the child.

2. The child does not have to produce the sounds being stimulated in order to go on to a new sound.

3. Keep a record on the Auditory Development Checklist in the Parent Notebook of speech sounds produced spontaneously and in imitation.

4. See pages 501–503 of the activities section for more stimulation ideas.

Lesson 15

Stimulation with Meaningful Words
(Phase III, Skill 7, Sub-skill 15)

Outline/Parent Objective

1. Parents will provide stimulation with meaningful words for the vowel and consonant sounds spontaneously produced by the child.

Child Objective

1. Child will use more vowel and consonant sound production.

Materials

1. Vocalizations produced by child and parent
2. Common objects in the home

Lesson

Discussion. Describe this skill for the parent utilizing a sound (for e.g. /a/) that the child can already produce. Together with the parents think of meaningful common objects (for e.g. sock, rock) that contain the same vowel sound. Place the objects where they are visible to the child so the parents can provide repeated stimulation throughout the day. Have the parents emphasize the selected sound for at least two weeks, making sure the objects are meaningful for the child. These objects should also be named as often as possible in the appropriate context (i.e., put your *sock* on, or I see a *rock*, etc.). Explain to the parents that this process is designed to increase the stimulation their child receives for particular sounds over the amount they would normally be able to provide during the daily routine. Pick a new sound every one to two weeks, eventually using all the vowels and consonants.

Teaching strategies.

1. Combine this skill with the previous one (stimulation for vowels, then consonants) providing meaningful words for the specific sounds selected for stimulation and/or imitation.

2. Place the objects for the two-week period on a string over the child's crib or hang them from the couch.

3. Remind parents to use varied inflectional patterns to help attract their child's attention to the meaningful words.

4. If appropriate, have parents keep a record of how many times each day they were able to utilize the selected words. Reinforce the parents and challenge them to increase word usage.

Review Questions For Parents

1. Why do you think it is important to repeatedly use meaningful words for the speech sounds produced by your child? (making them meaningful will improve his attention to the sounds and words)

Sample Challenges

Challenge the parents to utilize the skill repeatedly throughout the day. For example:

1. Provide the meaningful word *off* for your child's /ɔ/ sound by playing with various family members' hats and say "off" with rising intonation as you or he takes them off.

2. Increasingly utilize the word *bye-bye* (as a meaningful word for your child's /aɪ/ sound). Consistently say "bye-bye" as you put clothes away in each drawer, as you put toys, food, etc. away. Use varied intonation, duration and stress patterns.

3. Name *nose* many times during the day on the child, on the parents, pets, dolls, or stuffed animals.

Introduction To Phase IV

Discriminating and Comprehending Environmental Sounds, Gross Vocal Sounds, Function Words and Phrases, and Fine Speech Sounds; Imitating and Meaningfully Using Speech

This is not a formal lesson. It is suggested that these materials be presented in conjunction with lesson 16.

Outline/Parent Objectives

I. Parents will provide repeated opportunities for their child to discriminate and understand:
  A. environmental sounds
  B. gross vocal sounds
  C. words and phrases
  D. fine speech sounds

Child Objectives

1. Child will attend to differences among and demonstrate comprehension of: (a) environmental sounds, (b) gross vocal sounds, (c) words and phrases, (d) fine speech sounds.
2. Child will begin to imitate words and phrases and use them with meaning.

Materials

1. Environmental sounds and speech
2. Common objects
3. Pictures

Discussion of Phase IV. The pre-school age child who is listening consistently to babbling and speech and is interested in imitating his parents is ready to begin receiving stimulation for the comprehension and discrimination of speech. The child's babbling should begin to develop into single words and then phrases spoken with meaning. This stage (which is Phase IV) naturally leads into the Home Language Stimulation Program. Only *after* the child uses many spontaneous word approximations and attempts willingly to imitate speech is more direct work on speech skills appropriate. This is generally accomplished in a school or therapy setting. A normal hearing child *listens* more than one year before reaching this phase.

The goal of this phase is to call the child's attention to differences among speech sounds. Like the direct localization portion of the program, discrimination of nonspeech sounds is not a precursor to speech perception, but rather is utilized as a means of increasing the usefulness of hearing in general. The emphasis should be on speech discrimination and comprehension.

Explain to the parents that they will learn to help their child attend to smaller and smaller differences among sounds. Discuss how they have already stressed intensity, duration and pitch changes as well as distinct vowels and then consonants in previous speech stimulation skills. Point out how their child is attending to these features. The child's vocalizations reflect this as well.

Lesson 16

Discrimination and Comprehension of Environmental Sounds
(Phase IV, Skill 8, Sub-skill 16)

Outline/Parent Objectives

I. Parents will provide repeated opportunities for their child to discriminate and comprehend environmental sounds.

Child Objective

1. Child will attend to differences among and demonstrate comprehension of environmental sounds.

Materials

1. Naturally-occurring and planned environmental sounds

Lesson

Discussion. Discuss with the parents the following parent skills prerequisite to actually carrying out environmental discrimination activities. The parents must be consistently: (a) calling their child's attention to sounds in the environment, (b) showing the child what made the sound (source), (c) naming the sound source, (d) explaining the meaning of the sound ("Listen! I hear a car. Daddy's home!"), (e) helping the child respond appropriately to a wide variety of environmental sounds, (f) encouraging turn taking.

If the parents are not consistently doing these skills, all of which may have been acquired during the attending and recognition phases, take the time to re-emphasize each of these. If the parents are not consistently doing these, the discrimination task will *not* be meaningful. (See Notes/Supplemental Information section at the end of this lesson for more information.)

If the parents are ready, discuss the meaningful environmental sounds their child clearly attends to, recognizes and localizes that can be utilized for discrimination. Explain that the sounds need to be very different at first, by using the following suggestions and *making up examples* from sounds the child hears.

1. **Noisy versus rhythmic sounds.** For example: pans banging versus steady knocking.

2. **Abrupt versus continuous sounds.** For example: door slamming versus electrical appliance hum.

3. **Repeated versus non-repeated sounds.** For example: clock (sound unit of *tick* is repeated) versus kitchen timer (the sound unit *ding* on the timer is presented only once; it is not repeated).

4. **Soft versus loud sounds.** For example: TV at low volume versus TV at high volume.

5. **High versus low sounds.** For example: high chords on piano versus low chords.

6. **Fast versus slow sounds.** For example: spoon on pan (drumming fast) versus spoon on pan (drumming slow).

Have the parents select two sounds that are different but of approximately the same intensity. As the child's abilities progress, pick harder discrimination tasks (for example, one noisy sound versus another noisy sound). Remember to pick sounds that are relevant and interesting to the child. Parent advisors may want to utilize the following discussion to teach the parents the steps involved in this skill.

"**Step one: Use clues.** Tell your child to listen carefully. At later sessions, drop clues. Then add distraction.

Step two: Present sounds.

1. Show your child two sounds so he can associate (pair) the sounds with their sources.

2. Present the two sounds out of your child's line of vision one at a time; position the sound sources as close together as possible.

Step three: Observe child's responses.

1. Your child will turn around and point or otherwise indicate which sound he is hearing.

2. Your child will point to the correct picture from one of two pictures of the sound sources placed in front of him. Gradually you may want to increase the number of pictures used.

3. Your child will demonstrate correct behavior such as answering the knock at the door or turning the blender off.

4. Your child points to the correct noisemaker from a duplicate set of noisemakers in front of him and uses noisemaker appropriately.

5. In the case where the same sound source is being used such as soft versus loud (TV), fast versus slow (drum) or high versus low (piano), your child may indicate discrimination by:

Soft versus loud. Child puts finger over mouth (sh-sh) indicating soft; puts hands over ears indicating loud; extends arms wide to show big loud sound; hold hands close together to indicate little soft sound, etc.

High versus low. Child stands for high, squats for low; extends one hand high above the other for high sound; one hand slightly above the other for low sound; child imitates, for example, he bangs on low chords after he hears low chord or on the high chords after he hears high chords, etc.

Fast versus slow. Child imitates (knocks slowly when mother knocks slowly, knocks fast when mother knocks fast), child associates a slow bodily motion (slow swing) when he hears slow music and fast bodily motions (fast swinging) when he hears fast music.

Step four: Reinforce correctly. Reinforce your child. Say 'Good boy,' 'You heard that,' 'You heard the water.'

Step five: Prompt if necessary. Show your child the sound so the child can again pair the sound with its source. Then repeat the discrimination task."

After describing this skill, model the skill for the parents. Be sure to provide a quiet background at the beginning and emphasize the need to do this to the parents. Go over the five steps as often as necessary until the parents feel comfortable with the sequence and can perform it. Reinforce their attempts.

Teaching strategies.

1. The goal of all the discrimination activities is to call the child's attention to differences among sounds. Pure discrimination activities can turn out to be a "which sound did you hear" kind of task for the child which does *not* require comprehension. *Do not overdo this skill, but use it only as a step in the process of obtaining comprehension.*

2. Problems can result from discrimination activities if a child learns to get the right answer for the wrong reason. For example, the child may learn that the louder sound is the door knocker and the blender is the quieter sound or it is the blender when they hear no sound. This has nothing to do with recognition which is the process by which the child learns to attend to the critical features of complex sounds. Loudness is seldom a critical feature for recognition as the child will have to learn to recognize sound at varying distances. Also, remember that, if the child has only two choices, he has a 50 percent chance of guessing correctly.

Review Questions For Parents

1. Why is it important to use only sounds the child recognizes? (so that the sounds he is being asked to listen to and discriminate are meaningful and the activities are relevant to him and worth his attention)

2. Why do we start out with sounds that are very different from each other? (so the discrimination task will not be hard for him, and so he can learn the activity and how to respond)

Sample Challenges

Challenge the parents to include this skill in their daily listening activities using sounds that are meaningful and interesting to their child. For example:

1. Encourage your child to attend to the critical features of sound by focusing his attention on the discrimination of front door knocking (abrupt) versus water running (continuous). Show your child both sounds, turn him around and present one. Reinforce his correct response; if not correct, show him the correct sound and repeat the whole sequence again.

2. Work toward discrimination of one note repeatedly played on the piano versus one note played only once (or one high note versus one low note). Reinforce by letting him *play* the pattern.

Notes/Supplemental Information

1. Move to speech stimuli as soon as parents can *spontaneously* encourage their child to *use* his residual hearing to discriminate relevant environmental sounds on a daily, consistent basis. The child does not have to perform this task to go on to speech sounds.

2. See pages 505–507 for environmental sound discrimination and comprehension activities.

Lesson 17

Discrimination and Comprehension of Gross Vocal Sounds
(Phase IV, Skill 9, Sub-skill 17)

Outline/Parent Objective

1. Parents will provide repeated opportunities for their child to discriminate and comprehend gross vocal onomatopoeic sounds or words that simulate a real sound.

Child Objective

1. Child will attend to differences among and demonstrate comprehension of gross vocal sounds (words that simulate a real sound).

Materials

1. Sounds produced by parents

Lesson

Discussion. Discuss with the parents the idea that all sounds used for this objective are voiced sounds. Explain to the parents that some good voice sounds with which to begin are vocal sounds that simulate a real sound. Animal sounds such as *moo, bow-wow, meow* are good onomatopoeic sounds for this. Vehicle sounds such as *er-er-er, toot-toot* are more examples of these sounds. Other sounds include *bang-bang*(gun), *pop-pop* (popcorn), *tick-tick* (clock), *ding-dong* (bell), *z-z-z-z* (snoring), and *ring-ring* (telephone). Have the parents begin with two sounds that are very different such as:

1. **Noisy versus rhythmic sounds.** For example: baby's *wah!* versus donkey's *hee-haw, hee-haw*.
2. **Abrupt versus continuous sounds.** For example: *arf* versus *moo-oo-oo*.
3. **Repeated versus non-repeated sounds.** For example: *Choo-choo-choo* (sound unit is repeated) versus *toot* (sound unit is not repeated).
4. **Soft versus loud sounds.** For example: soft *grr-rr-rr* versus loud *grr-rr-rr*.
5. **High pitch versus low pitch sounds.** For example: high *er-er-er* (airplane high in air) versus low *er-er-er* airplane low in air).
6. **Fast versus slow sounds.** For example: fast *choo-choo-choo* versus slow *choo-choo-choo*.

To begin this skill, have the parents select two sounds that their child already recognizes from previous speech stimulation and auditory recognition activities. These sounds should be very different such as *choo-choo-choo* (repeated) versus *toot* (non-repeated). Use common objects such as stuffed animals that were used in previous sound recognition activities and whose sound the child recognizes. Use the following discussion in explaining the steps of this skill to the parents.

"**Step one: Use clues.** Use clues only if necessary. If your child is tuned out or not listening, give a clue: 'Listen, Johnny, listen, very carefully.'

Step two: Present sounds. Associate (pair) each of the vocal sounds *(choo-choo* and *toot)* with the objects (train and boat). Make sure your child has had sufficient pairing before you expect him to perform the discrimination task. This may take weeks or months for new sounds. When your child is ready, present one of the vocal sounds. Either have your child's back to the speaker or cover your mouth and nose as the sounds are presented.

Step three: Observe child's response.

1. Your child may pick up one of the two items (or pictures of the items) placed in front of him such as the boat or the train.
2. Your child may imitate the sounds.
3. Your child may show correct behavior such as picking up the airplane and flying it through the air after hearing *er-er-er* or shooting the gun after hearing *bang-bang*.

In the case where the same sound source is being used such as soft and loud cat's meow, or a high and low airplane sound, or a fast and slow *toot-toot,* your child will indicate discrimination by:

1. **Soft versus loud:** Child puts finger over mouth (sh-sh) indicating soft, puts hands over ears indicating loud; extends arms wide to show a big loud sound; holds hands close together to indicate a little soft sound; points to a large animal for a loud sound, a small animal for a small sound; imitates a loud sound versus a soft sound.

2. **High versus low:** Child stands for high, squats for low sound; child moves hand high in air (perhaps with airplane in it) to indicate high sound, moves down low to indicate low sound; imitates high versus low sounds.

3. **Fast versus slow:** Child imitates fast sound versus a slow sound; child taps finger or moves toy boat along or uses another body motion to indicate fast versus slow.

Step four: Reinforce. Reinforce your child. Say 'You heard the boat, good boy.'

Step five: Prompt if necessary. Show your child the expected response. Pair the vocal sounds with the objects again. Then repeat the discrimination task. Show him the expected response as many times as his interest allows."

After describing the skill, model it for the parents. Select two onomatopoeic sounds that are very different (*arf*—abrupt versus *moo-oo-oo* —continuous) and pair the sounds with the sources so the child knows which sounds belong to which sources. Then present the sounds one at a time so that the child cannot see you making the sounds and watch for an appropriate response from the child. If there is no response, pair the sound with its source again *(toot-toot* with boat). If there is a spontaneous response, reinforce the child immediately.

Teaching strategies.

1. Remember that the responses the child is expected to give will have to be modeled for him many times. Pair the sound with the toy or small object many times throughout the day to increase the child's recognition of the sound. When new sounds are picked that the child does not already know, sufficient time must be spent pairing the sound and the object so that the child makes the meaningful association before the discrimination task begins.

2. The primary purpose for using these sounds is to interest the child in listening. Make it fun. At the same time, begin using functional words with strong prosody.

Review Questions For Parents

1. Why must the child already recognize the sounds we select for discrimination? (so the discrimination task will be meaningful)

Sample Challenge

Challenge the parents to utilize this skill this week, for example:

1. Stimulate the child to atend to the differences between the speech sounds in *meow* and *oink-oink* (sounds he already recognizes) by presenting the two sounds first with vision and then behind his back. If he does not respond correctly, repeat the sequence again, show him the correct response, and reinforce him for trying.

Notes/Supplemental Information

1. See pages 509–512 in the activities section for more gross vocal activities.

Lesson 18

Discrimination and Comprehension of Words and Phrases
(Phase IV, Skill 9, Sub-skill 19)

Outline/Parent Objective

I. Parents will provide repeated opportunities for their child to discriminate and comprehend words and phrases.

Child Objectives

1. Child will attend to differences among and demonstrate comprehension of words and phrases.
2. Child will imitate speech.

Materials

1. Words and phrases produced by parents.

Lesson

Discussion. Describe this skill to the parents, stressing the importance of helping the child to discriminate words that occur in their normal daily interactions. The child should already have had repeated auditory stimulation of many of these words by the parents in Phase III. The goal here is to focus the child's attention on the sounds in these words and phrases and at the same time continue to develop the child's ability to listen to his own speech through his repeated imitation of the auditory stimuli. Encouraging imitation of the inflectional patterns of nursery rhymes and baby games should be emphasized here.

Begin with functional words that have strong inflectional patterns (prosody). If possible, help the parents pick words containing sounds the child can vocalize or the names of objects with which the child loves to play. Give examples to the parents such as *no-no, bye-bye,* and *all gone* which are good because they have definite inflections. The child's name is also usually an excellent functional word. To begin with, help the parents select functional words that are very different.

1. **Angry versus pleasant words.** For example: *no-no* versus *good boy.*

2. **Varying number of syllable words.** For example: *mine* versus *no-no-no* (one syllable versus three syllables).

3. **Male versus female spoken words.** For example: dad calling "Steven" versus mom calling "Steven."

The following discussion can be used to teach the parents the steps of this skill.

"**Step one: Use clues.** Use clues only if necessary when your child is definitely not listening.

Step two: Present sounds. Be sure to associate (pair) the words with meaningful situations throughout the day; i.e., 'Bye-bye' when you are going somewhere, 'Stop that!' when you are angry and want the child to stop. When your child has been stimulated with these words for at least one to two weeks, see if he can discriminate among functional words (know which words belong to which situations by listening). Present one functional word such as *no-no* without visual clues. Then observe your child for an appropriate response.

Step three: Observe child's response.

1. Your child may perform correct behavior, i.e., stop when mother says, *'no-no,'* wave when he hears *bye-bye.*
2. Your child may imitate functional words.
3. Your child may turn or point to the correct source. (For example, mother and father are in the same location. Mother calls, 'Steven.' Steven turns and indicates he heard mother.)

Step four: Reinforce. Reinforce your child by saying 'good' or 'I heard you.'

Step five: Prompt if necessary. If your child does not respond, pair the functional word with the correct behavior. For example, if the child is kicking and does not respond to the first *no-no,* repeat *no-no* and restrain his legs (this time allowing child to see your mouth and facial expression)."

After describing this skill, model it for the parents. Practice it with the parents until they are comfortable with the sequence. Have the parents demonstrate the skill. Reinforce their attempts and give additional help where indicated. Once the parent is comfortable with this skill, select another functional word and/or phrase. The child may need to be stimulated with the new functional words/phrases for one or two weeks before responding. Be sure to show or say for the child the expected response and pause, utilizing facial expression to indicate your desire for him to imitate you or respond appropriately. If he does imitate or respond, reinforce immediately. If he does not, after a pause, take his turn and model for him again.

Teaching strategies.

1. Let the parents select words and/or phrases they particularly want their child to understand so as to enhance communication.
2. Keep an accurate list in the Parent Notebook of words and phrases the child comprehends, imitates, and uses meaningfully.

Review Questions For Parents

1. What should you do when your child does not respond appropriately to a word or phrase? (model the correct behavior paired with the word spoken again)

Sample Challenges

1. Stimulate your child with functional words *no-no* and *bye-bye* in meaningful situations frequently throughout the day for a one-week period.

2. Stimulate your child to discriminate and comprehend *no-no* by using it appropriately without visual clues. If he stops, reinforce immediately. If he does not respond, show him the expected response and repeat *no-no* again.

3. Encourage your child to imitate you. Immediately reinforce any vocalization attempt to imitate. When he does not take his turn, model it for him after the pause.

Notes/Supplemental Information

1. See pages 513-514 for more functional words and phrases activities.

Lesson 19

Discrimination and Comprehension of Fine Speech Sounds - Vowels
(Phase IV, Skill 10 and 11, Sub-skill 19)

Outline/Parent Objective

I. Parents will provide repeated opportunities for their child to discriminate and comprehend vowel sounds.

Child Objectives

1. Child will attend to differences among and demonstrate comprehension of vowel sounds.
2. Child will imitate and spontaneously use meaningful speech.

Materials

1. Child and parent produced speech sounds
2. Common objects and pictures

Lesson

Discussion. Indicate to the parents that they are already stimulating the child with vowel and consonant sounds as discussed in Lesson 14 (Phase III). The child has heard these sounds used in meaningful words over several months of listening time. Now parents should return to the beginning of the list of speech sounds they first started with, select one vowel and model it in words for at least a week. For example, the vowel /i/ *(ee)*: (a) getting dressed for bed: *knee, feet, sleep*; (b) eating: *eat, meat, pea;* (c) working in garden: *seed, weed, tree, bee;* (d) riding tricycle: *beep-beep, whee;* (e) introducing pronouns: *you, me, we;* (f) I see ______ game *(key, TV, teeth).*

Then select another vowel per week, until the child has been exposed to several vowels. Now begin the discrimination and comprehension sequence to encourage the child to attend to the critical features of the selected vowels presented in meaningful words.

The parents and parent advisor should first select very different one-syllable words (containing different vowels *and* different consonants). For example: (a) *no* versus *mine,* (b) *eye* versus *nose,* (c) *tree* versus *cake,* (d) *go* versus *stop.*

The parent advisor should then present the steps involved in the discrimination and comprehension sequence in this way:

> "**Step one: Use clues.** Use clues when your child is obviously not listening.
>
> **Step two: Present sounds.** To begin with, say, 'Where is your eye?' 'Where is your nose?' or 'Go' then 'Stop' (different vowels and different consonants). Later say 'Show me the *bat.*'

'Where is the *bee?*' 'Where is the *bow?*' (Same consonant, different vowels). If possible, do not draw attention to your mouth.

Step three: Observe child's response.

1. Your child may show, by appropriate behavior, that he understands the words (*go*, *stop*, etc.).

2. Your child may point to appropriate pictures of objects *(bee, bat, bow)*.

3. Your child may imitate the words.

Step four: Reinforce. Reinforce your child by saying 'Good,' 'You heard bee,' 'I heard you.'

Step five: Prompt if necessary. If your child does not respond:

1. Pair the word with the behavior. 'Stop, Cathy' (restrain the child from moving). 'Now go, go, Cathy' (move the child forward). Repeat discrimination task.

2. Pair the word again with the picture or object. ('See the bee, that is a bee, what a big bee.')"

After the child has shown he can discriminate and comprehend these kinds of words, help the parent select *three to four* more words with different vowels but the same consonants, such as: *ball* versus *bell* versus *Bill*. Stimulate the child with these new words before asking him to discriminate and comprehend. Remember comprehension is as important as the discrimination task. The words should be relevant and meaningful to the child and always presented in the context of daily living activities. Pictures should be utilized only after the child has experience with the object or real situation.

Have the parents do this skill, reinforcing them for their efforts.

Teaching strategies.

1. Encourage the child through facial expression to imitate the parents' speech. Do *not* pressure the child to imitate. Rather wait for imitation to occur spontaneously and then reinforce it immediately and effectively. Be sure to reinforce all of the child's spontaneous speech productions.

Review Questions For Parents

1. What words can you utilize for discrimination and comprehension of vowels? (only words that have been meaningfully paired with the real object or event long enough that the child comprehends them)

2. Why? (so that the discrimination task will be meaningful)

Sample Challenges

1. Each day this week, provide stimulation of the vowel /o/ (as in *go)* in meaningful words such as *blow,* (blow nose, blow candles, blow bubbles), *come-go* (simple commands), *high-low* (putting things away), *soap, toe, cold, nose* (bath time). (Note: Pick only one or two of the above examples a week depending on the child's comprehension level).

2. Repeatedly encourage your child to discriminate and comprehend by asking such things as "Where is your ball?" "Where is your ball?" Use *sack—sock, tie—toe,* etc.

3. Indicate by facial expressions and turn taking that you *expect* your child to imitate the word *no.* You should reinforce your child's imitation attempts 100 percent of the time.

Notes/Supplemental Information

1. See the activities section, pages 515–518 for more fine speech discrimination and comprehension activities.

2. Emphasize the comprehension of the words utilized as much or more than the discrimination activities.

Lesson 20

Discrimination and Comprehension of Fine Speech Sounds — Consonants
(Phase IV, Skill 10 and 11, Sub-skill 20)

Outline/Parent Objective

I. Parents will provide repeated opportunities for their child to discriminate and comprehend consonant sounds.

Child Objectives

1. Child will attend to differences among and demonstrate comprehension of consonant sounds.
2. Child will imitate and spontaneously use meaningful speech.

Materials

1. Child and parent produced speech sounds
2. Common objects and pictures

Lesson

Discussion. Select one consonant and model it in the initial position in words for at least a week. For example, if the consonant is /p/, help the parent think of times during the day when they can use it meaningfully. Remember to utilize repetition and interesting intonation: (a) eating: *pea, pill* (vitamin), *pass* (the milk), *please;* (b) dressing: *pants, pocket, purse;* (c) garden: *pick, pull;* (d) *playing: pat* (the dog), *party, play;* (e) cooking: *pan, pot.*

Depending on the progress and needs of the individual child, move from using the speech sound in single words to using the words in phrases and short sentences. This step is important because discrimination and comprehension must develop for the continuous flow of inflected speech.

Have the parent select a different consonant each week or every two weeks. Help the parents select words containing that consonant. Have the parents post these words in the home as a reminder to use them repeatedly around the child.

After three to four weeks, begin the discrimination and comprehension sequence, selecting a few words containing different consonants in the initial position but the same vowel like *cat* and *hat*. The following discussion can be used to teach the parents the steps involved in this skill.

"**Step one: Use clues.** Clues should be used only if your child is obviously not listening.

Step two: Present sounds. 'Where is your cat?' 'Where is your hat?' (Dr. Seuss' books, 'Cat in the Hat' and 'Cat in the Hat Comes Back' are good.) You may want to use *amplified whispering* when presenting these words. When a person normally says a word such as *hat*, the more intense vowel sound (a) tends to mask out the consonant (h). If you whisper the word *hat*, the *h* sound comes through while the vowel sound (a) is suppressed. If possible, do not draw attention to your mouth.

Step three: Observe child's responses.

1. Your child may point to correct pictures or objects *(cat, hat)*.

2. Your child may imitate the words.

3. Your child may indicate, by appropriate behavior, understanding of words such as *stop* or *hat*.

Step four: Reinforce. Tell your child, 'Good,' 'I heard you,' 'You stopped.'

Step five: Prompt if necessary. If your child does not respond:

1. Pair the word with the picture of the object 'That is the cat; see the cat.'

2. Pair the word with the behavior, 'Hop, Tommy, hop; hop like this.' 'Now stop; stop like this.' Repeat discrimination task."

After describing the skill, model for the parent:

1. How to use a specific consonant in many words while performing various activities around the home.

2. How to determine if the child can discriminate among various consonants after the child has been exposed to several words containing different consonants.

Have the parent demonstrate the skills (stimulation and/or discrimination/comprehension sequence). Go over the steps as many times as necessary until parents are comfortably carrying it out on their own.

Teaching strategies.

1. Encourage the child through facial expression to imitate the parent's speech. Do *not* pressure the child to imitate. Rather wait for imitation to occur spontaneously and then reinforce it immediately and effectively. Always warmly reinforce all of the child's spontaneous speech productions.

Review Questions For Parents

1. What words can you utilize for discrimination and comprehension of consonants? (only words that have been meaningfully paired with the real object or event long enough that the child comprehends them)

2. Why? (so that the discrimination task will be meaningful)

Sample Challenges

1. Stimulate your child with /h/ by using *hi* for all greetings; playing hide-and-seek; putting things away *h*igh and using the word *h*elp appropriately. Facial expression and intonation should be emphasized.

2. Use real objects for the discrimination/comprehension of: *cat, hat, bat; boy, toy; kite, light, night*. Find pictures of the objects in magazines, and start a scrapbook.

Notes/Supplemental Information

1. Eventually the child should also learn to discriminate consonants in the final position of one-syllable words (for example *bean, beet, beak, bees*, etc.).

2. Keep an accurate list in the Parent Notebook of: (a) sounds being worked on, (b) sounds the child discriminates, and (c) words he comprehends with the target sounds in initial and final positons.

3. Keep another list in the Parent Notebook of: (a) specific speech sounds, words and phrases the child imitates, (b) specific speech sounds, words and phrases the child uses spontaneously.

4. The child should begin to make spontaneous approximations of one-syllable words, for example: *ba* for bath.

The child should begin to try to imitate one- and perhaps a few two-syllable words.

He may begin to spontaneously approximate two-syllable words or phrases (example: *all gone*).

5. In general, speech therapy is not recommended for very young hearing impaired children. Speech should be naturally stimulated in the home, as in the above skills, but not subject to formal drill and correction. Speech therapy for the older child who has a speech base can best be accomplished in a school or clinic setting.

Resources For Parent Advisors

Boothroyd, A. (1984). Auditory perception of speech contrasts by subjects with sensorineural hearing loss. *Journal of Speech Hearing Res.*

Boothroyd, A. (1982). *Hearing impairments in young children*. Englewood Cliffs, N.J.: Prentice Hall.

Chase, R. A. & Rubin, R. R. (1978). *You and your baby: The first wondrous year*. New York: Johnson and Johnson Child Development Publication, Collier Books, Macmillan. Also: *Your toddler* and *your preschooler.*

Erber, N. R. (1972). Auditory, visual and auditory-visual recognition of consonants by children with normal and impaired hearing. *Journal of Speech Hearing Res., 15*, 2. 364-371.

Ling, A. H. (1977). *Schedules of development in audition speech language communication for hearing impaired infants and their parents.* Alexander Graham Bell Association for the Deaf.

Ling, D. (1976). *Speech and the hearing impaired child: Theory and practice*. Washington, D.C.: Alexander Graham Bell Association for the Deaf.

Northcott, W. H. (Ed.). (1972). *Curriculum guide hearing impaired children, birth to three years and their parents*. Washington, D.C.: Alexander Graham Bell Association for the Deaf.

Painter, G. (1971). *Teach your baby*. New York: Simon and Schuster.

Pollack, D. (1970). *Educational audiology for the limited hearing infant.* Springfield, IL: C.C. Thomas.

Pushaw, D. R. (1976). *Teach your child to talk, a parent guide,* Revised Edition. Fairfield, N.J.: Cebco Standard Publishing.

Stovall, D. (1982). *Teaching speech to hearing impaired infants and children, zero to three years.* Springfield, IL: Charles C. Thomas.

AUDITORY ACTIVITIES

Lesson 1 (Phase I)

Attending To Environmental Sounds And Voices
(Skill 1)

BIRTH TO SIX MONTHS

1. While putting the aid on the child each morning, be sure that the aid is turned off. Then setting the volume at the proper level, smile at the baby, get good eye contact, turn the aid on. Say "Good morning. Can you hear me?" in a quiet, pleasant voice with good inflection. All this is done in a few seconds. Awareness of sound should be a pleasurable experience; the parent is largely responsible for making it so.

2. Whenever possible, associate sound and eye contact with the baby. Eye contact is a very important source of communication for an infant; especially with important adults. Associating sound or voice will help make awareness of sound important also.

3. Lean over the baby and call his name. As the baby finds your face, try a variety of interesting sounds like whistling, smacking and clicking. Do one at a time, followed by your voice. A fussy baby can be momentarily distracted by an interesting sound or lip movement. The baby may try to locate the sound as he becomes 6 months of age. Do activities for a few minutes only.

4. Sing while holding the baby with his head on your chest. This is good for vibration and rhythm. Use a simple song with two lines. Sway to emphasize rhythm, singing and repeating.

5. A fussy baby of this age may be quieted in response to his mother's voice. Closely associate mother's voice with eye contact. If you allow your hearing impaired infant an opportunity to hear you before he sees you, watch for quieting responses that indicate he is aware of your voice.

6. Put a small noise maker (metal clacker, bell, rattle) in your pocket. Periodically throughout the day, approach the child and say "listen," making the sound. Then catch the child's attention visually with the noise maker. Allow the baby to hold the noise maker if he can and if it's safe to do so. Help him make the sound himself. Reinforce this.

7. Provide noise toys for the child to play with on his age level. Around the 4 month level the baby begins to show interest in playthings. He may have definite favorites.

8. Provide visually interesting things for your baby to see and hear. A fussy baby can be quieted if given things to listen to or see. If you have a visually interesting sound source, use it to stimulate his hearing while keeping his attention visually.

9. A baby at the 3 month level will often stop sucking to listen to an interesting sound or voice.

10. At the 3 month level, the baby may begin alerting to the voice of an approaching adult, especially a familiar voice singing. There may be a searching with the eyes, or indication of their response with a change in physical activity. Parents should approach their infant, sometimes calling his name, sometimes singing, allowing him to hear them before the baby sees them.

11. A baby at the 5 month level may reach for objects hanging within reach over his crib. His aim should be pretty good. Hang something that makes a sound when touched, i.e. a bell, a plastic ball with items in it or windchimes.

12. During a parent's busy times and baby's awake quiet times, move the baby about every 10 minutes to a new location with a new sound source. Keep him close to call his name and talk to him. If a nearby sound source also has some visual value, so much the better. Give the baby new sounds to hear, new views to see. This is easier when an infant is in an infant seat.

SIX TO TWELVE MONTHS

13. When the child is wearing his hearing aid, take the opportunity a few times during the day when you are close and he is quiet to turn the aid off. Shake your head "no," indicating with gestures that there is no sound. Then turn the aid on. Nod your head "yes," and say "I can hear. It's on." The child may imitate your facial expressions or head movements. If he does so spontaneously, he may be responding to the absence and presence of sound.

14. Introduce sound makers auditorily, visually, then tactually. Clue the child to listen by pointing to your ear. Show the child the sound source. Then allow the child to hold the sound source if appropriate and help him make the sound himself. Reinforce this.

15. Turn on the tap and alert the child to the water running. Turn it off and on. A child at the 18 month level will enjoy turning the faucet on himself. Shake your head "no" when the water is off indicating there is no sound. Nod your head "yes" and smile when the water is on and say, "I can hear the water." Water in the bathtub is louder and lower in pitch.

16. Use the radio and other appliances to turn on and off. Indicate presence or absence of sound as suggested in activity #3. The child may begin to imitate your facial expressions and head movements. If he does so spontaneously, reinforce him.

17. Play peek-a-boo. Cover the child's head briefly with a blanket. Say "boo!" and pull the blanket off. After repeated stimulation, watch for the child to begin pulling the blanket off by himself when he hears the "Boo!" He will have a hard time waiting for the sound. It is sometimes helpful to have an adult or an older child with the baby under the blanket to wait, point to his ear, and help pull the blanket at the right time.

18. Act as if you are sleeping. Another adult places the child near you. Wake up and say "Boo!"

19. A child around the 6 month level will babble or become active in response to exciting novel sounds. Introduce a new sound occasionally; watch for responses. At 9 months a child may become bored and begin to "tune out" repetitions of the same sound stimulation as his memory develops.

20. A baby may coo or hum in response to music. Provide music to listen to during quiet times. Change the volume occasionally within a comfortable range, as the baby may respond to

the change in volume of a consistent sound. Look for widening of the eyes or some other change in activity.

21. Around the 7 month level, a child can hold two objects, one in each hand, which he may begin to bang together. Alert him to any sounds that he makes and reinforce him.

22. Use your baby's growing awareness of your voice to comfort him. A baby who is upset because his mother is leaving him with a babysitter should be comforted, cuddled, and soothed by your voice for a few minutes. He will likely quiet soon after you leave.

23. At the 8 month level a baby may discover that he has real noise making ability. He may bang his hand flat on a table or high chair, bang with his spoon, throw or drop things on the floor in anticipation of the sound. Alert him and reinforce him for any appropriate sound he makes himself.

24. Around the 9 month level, a baby will likely begin to repeat an action for which he is applauded. Use clapping liberally for reinforcement. If the child makes a sound by himself, alert him to the sound, point to your ear, then applaud.

25. At the 11 month level a child may lift the lid of a large box to search for a familiar object. Hide a favorite noise toy that makes a sound independently inside. Alert the child to the sound, use facial expressions and your voice to enlist his curiosity, help him lift the lid to find the toy. He may search for an unfamiliar object if it is interesting to him. A sound toy is always better if it has visual interest for the child.

26. Snap or clap your fingers in front of the baby's face. Vision will hold his attention while supplementing audition. Sing and clap to a simple song, repeating the rhythm. Alert the child by pointing to your ear, then point to his ear.

27. If you have a few rhythm instruments like drum, tambourine, bell or chime, sing to the baby and play or tap a rhythm instrument at the same time. Play just loud enough to get to the child's aided threshold. Change to a different instrument using only 2 or 3 in one short session. Keep the same song; repetition of the rhythm is good. Familiarize the baby with the sounds of the instruments. This will help elicit auditory responses, especially if the instruments are also visually interesting. If there are not a lot of resources in the house, make your own sound toys with strong colors in bold patterns.

28. When mother sees baby crawling from one room to another or along a couch or chair, get down on all fours in a positon around the corner. Begin calling the baby by name as he approaches. Peek around the corner and pull back as soon as the baby sees you. Call again, then pop your head out and say "boo." Repeat as often as possible. Watch for signs that the baby is responding to your call before he sees you.

TWELVE TO EIGHTEEN MONTHS

29. Hide in a closet. When the child is close, call his name, look out and say "peek-a-boo."

30. Put an object in a container like an oatmeal box with stockings around both ends. Shake the box and tell the child to listen. Point to your ear. Then let the child put his hand in the box and feel the object. Make the sound again. Then show the child the object. Allow the child to hold and

manipulate the item if he wants to. Some children will not be able to wait but will want to see as soon as you indicate something is in the box. Alert him to the sound, give him the box and let him dig the object out.

31. Around the 20 month level, children begin to use pretend play. Someone pretends he is sleeping. Take the child's hand and tiptoe around saying "sh-sh-sh." Then walk to the person who is sleeping and shout, "Boo!" The sleeping person awakes and jumps up. The child is next to sleep. Cover the child's eyes gently. The child may be willing to pretend to sleep, although this takes time. Another person moves close to the child and says, "Boo!" The mother may need to help the child initiate the response the first few times. Children do not pretend to "sleep" very long, but the activity will work if you can just distract the "sleeping" child visually from the person who will say "Boo."

32. Use the child's favorite toys to make sounds to alert him.

33. Put a small favorite sound toy in your apron or pants pocket. Make the sound, then let the baby dig the toy out of your pocket. Children at this age level enjoy pockets and what they may contain.

34. Children of this age are learning about object permanency. Tie a favorite noise toy to a long string and hid the toy but leave the end of the string visible. Make the sound and encourage the baby to pull or follow the string.

EIGHTEEN TO TWENTY-FOUR MONTHS

35. Pull toys that make sounds are excellent for this age level. Around 18 months the child begins to be able to walk and pull a toy. Empty cans attached with string make excellent noisy pull toys.

Lesson 2 (Phase I)

Attending to Distinct Speech Sound Activities
(Skill 1)

BIRTH TO SIX MONTHS

Note: Age increments indicate when the activities may be introduced. They can be continued beyond the ages if the child is still interested. Many of the earlier activities are also appropriate for later ages. The guidelines are not rigid; babies are unpredictable, some will enjoy an activity earlier or later than indicated.

1. Imitate and repeat to the child all sounds that he makes while cooing and gurgling.

2. When attracting the baby with something visually interesting like a new toy or picture, express his interest by saying, (a) as in father or (u) as in school or (o) as in boat, with sliding inflection as he sees the item.

3. Gently bicycle baby's legs while he is resting on his back after diapering, repeating a selected vowel or consonant sound.

4. When baby shows distress, delight or excitement, use the (o) as in boat sound to add voice to his facial expressions. Distress—"oh, oh" or "oh, no." Delight—"oh↗↘" with rising then falling inflection. Excitement—"oh, oh, oh↗" with rising inflection.

5. As you rub the baby with oil or lotion, repeat a selected vowel or consonant sound, matching your vocalizations to the movement of your hands.

6. As the baby begins to follow objects with his eyes, move an attractive object from side to side and up and down, slowly trying to get him to follow with his eyes. As you do this, vocalize using a selected vowel sound.

7. Do the above activity but move your face from side to side and up and down, vocalizing as you move slowly, trying to keep the baby's attention.

8. When bathing the baby, select a vowel or consonant sound to use as you gently wash and vocalize. When the baby begins to splash in the water with his arms and legs, add a vocal sound to his movements.

9. When holding the baby up under his arms, his feet will naturally move in an approximation of walking, or the older baby will delight in bending his knees to bob up and down. As he moves, repeat a selected vowel or consonant sound or a combination in rhythm to his physical movements.

10. Wait for the baby to vocalize back as you smile and talk to encourage him. When he does, let him finish, then repeat his vocalizations for him.

11. Dangle a safe object in the middle of the baby's vision. After the 3 month level, he will probably begin to reach for it. As he does and comes closer, say "Reeeach" elongating the vowel sound. When he grabs it, say "Yeah!" elongating the vowel sound. Let the child manipulate the item.

12. When greeting the baby after having been absent for more than just a few minutes, raise your hand in greeting, give a big smile as the baby sees and recognizes you and say "Hi!" elongating the vowel sound, say the baby's name, and pick him up for a hug.

13. By the 4th month, the baby will be more ready to respond to sounds and voices at a distance. He may have begun to recognize important voices and respond with anticipation. Several times during the day, as you approach your child from another room, begin calling "Yoo, hoo! (baby's name)!" Elongate the vowel slightly. Continue to call as you approach until you get close enough for the baby to see and recognize you.

14. Hold the baby in front of a mirror, direct his attention to his own image. Say "Oo, oo, oo, that's you!" Or you could say his name, followed by a repetition of the vowel sound in his name or whatever rhymes and sounds natural and fun.

15. If you notice the baby lying on his back playing with his toes say something silly like, "Oh, oh, oh, you found your toe."

16. With baby facing you, sitting in your lap, support his back and head with your arms and hands. Tip him gently back and forth, vocalizing with a selected vowel sound, elongating it and using rising and falling inflection as you move him forwards and backwards. Watch for smiles and giggles.

17. Play "So Big."
How big is baby?
Soooooo big! (stretch arms up and out).
How big is baby?
Sooooooo big! (stretch legs up and out)

18. Sit the baby on your lap, facing you. Vocalizing with a selected vowel, or consonant, bring your face closer and closer to the baby's until you are nearly touching his nose. Pull back and repeat in a playful manner. You can do the same activity with your finger, flying in to touch the baby's nose.

19. With the baby on his back or sitting in a chair, move your hand through the air, like an airplane, vocalizing with a selected vowel or consonant sound. Bring your hand to the baby's tummy and tap him gently three times with your finger, matching the movement with another vocalization. For example, using (u) as in school, "Ooooooooooo, boop, boop, boop."

20. Play peek-a-boo with a large mirror and a blanket. As you uncover the baby's face in the mirror, say "Peek-a-boo" exaggerating the (i) sound or the (u) sound, depending on which vowel has been selected for stimulation.

21. Play helicopter with the baby. Hold the baby firmly around the middle; avoid turning him upside down to assure that he won't be frightened. As you raise the baby into the air, vocalize with a selected vowel or consonant sound.

22. Make a quick temporary slide for the baby by putting the folded ironing board through the rungs of a chair. Sit at the bottom with your legs extending on either side of the board. Set the baby on the board and as you help him slide down, say "Wheeee!"

23. When you imitate the baby's vocalizations, place the baby's fingers on your lips. Let him feel the vibrations and the breath as each sound is made.

SIX TO TWELVE MONTHS

24. As the baby learns to crawl, he will raise up on hands and knees and rock back and forth. Get on the floor with him, imitate his rocking, add vocalizations with selected vowel or consonant sounds.

25. When the baby begins to pound on the high chair or table with his open hand or a spoon, stimulate with selected vowel or consonant sounds each time he pounds. A carrot makes a good pounding tool, as it doesn't make a lot of noise, allowing the child to hear more of your vocalizations.

26. If the baby likes Cheerios or some other similar dry cereal, sprinkle a few on his high chair tray. As you fly one into his mouth, say "Here come the OOOOOOO's" exaggerating the vowel sound. Let him eat some on his own, then fly another one into his mouth.

27. Let the baby watch you play with a soft doll and a mirror. Encourage him to look at the dolly in the mirror. Bounce the dolly toward the mirror, saying 'Ba, ba, ba, boo!" or other selected vowel sounds and consonant sounds. Let him try with the dolly.

28. Hang a punch ball from the ceiling within baby's reach. Show him how to punch it, vocalizing each time.

29. Play a gentle game of tug of war with the baby. Give him one end of a scarf or blanket. Gently tug and vocalize. The baby will enjoy this playful lesson in turn taking.

30. Put a small interesting toy in your hand. Let the baby see it for only a moment and then close your hand. Say, "Where'd it gooooo?" exaggerating the (o) sound. Repeat until the baby discovers the toy in your hand. Show him the toy again if he doesn't understand.

31. When you have the baby's undivided attention, as when he is in his high chair, play a handclapping game. Clap your hands softly together, saying a selected vowel or consonant sound as you do, then quickly hide your hands under a blanket on the chair tray, or on the floor if you are sitting there, or on your lap if the baby is sitting on your lap. Wiggle your fingers under the blanket if necessary to catch his attention. When the baby pulls the blanket off your hand, play the game again.

32. Play the above game but clap the baby's hands gently together, vocalizing as you do, then put his hands under the blanket. Wait for him to pull them out and begin clapping again.

33. Use your baby's love of novelty by vocalizing some vowel and consonant sounds into a cardboard tube. You will be surprised at the attention. Give the tube to the baby.

TWELVE TO TWENTY-FOUR MONTHS

34. Put a puppet on your hand. Say "Hellooooo!" to the baby. Put the puppet on his hand, too.

35. As you are undressing the baby or as he is pulling off his own socks, say "Ooooooff!" as you pull off each item.

36. As you watch the baby scribble spontaneously on paper, say a selected vowel or consonant sound to match his movement.

37. Help the baby learn how to string things together such as large beads or round plastic curlers. Vocalize with selected sounds as he puts each one on.

38. Blow soap bubbles with the baby. Before you blow each bubble, say "Ba, ba, bubble" or other selected sounds. Allow the baby a chance to babble and blow.

39. Vocalize selected sounds as you dance with the baby, either holding him in your arms or standing on the floor holding his hands. Keep the music in the background soft enough that it doesn't interfere with the perception of your speech.

40. When baby begins to learn how to throw a small cloth or rubber ball, stimulate for the (o) sound by saying "Throoooow" each time you or he does it.

41. Take a walk outside, find a puddle of water and some pebbles. Take turns. Say "Throoooow" and toss the pebble into the water.

42. Make a hole in the lid of a large plastic container, such as an ice cream tub, just large enough for the child's small rubber ball. The baby enjoys dropping the ball in then taking off the lid to retrieve it. As he does this, stimulate the (o) sound by saying, "Oh-oh, where'd it go?" Slightly exaggerate the (o) sound. Children of this age are fascinated by lids and containers and enjoy emptying them.

43. Once the baby can identify nose, eye, and mouth on himself or on a doll, use these words to stimulate the important vowel sounds in them by pointing them out on dolls, people, pictures, or animals.

44. Use a set of magnetic letters on the refrigerator for vowel and consonant stimulation. Select a vowel or consonant sound to stimulate and then pick out those letters containing that sound. For example, the (e) as in feel is found in the names of the letters B, D, E, G, P, T, V, and Z.

Lesson 5 (Phase I)

Stimulation For Vocalization Activities
(Skill 2)

Note: In all activities "take turns" or pause for your child's response. Reinforce all spontaneous vocalizations.

BIRTH TO SIX MONTHS

1. Each time you dress or undress the baby, say a speech sound with rising inflection as you go up his arms or legs and one with falling inflection as you go down.

2. "Dance" your infant so that his feet gently touch the bed; sing a favorite simple song or nursery rhyme, with changes in pitch, loudness, and duration.

3. Sing with lots of inflection and eye contact during all diapering times. Use simple songs or nursery rhymes.

4. "Coo" or hum while rocking to relax you and the baby.

5. Smile and giggle each time you hug the baby.

6. While massaging the baby with lotion, make a circle on his tummy and vocalize, matching your voice with the movement.

7. Listen carefully to the baby, respond to *all* sounds as though he is attempting communication with you.

8. With baby lying down and relaxed, bend over him and place his hand over your mouth. Pat the baby's hand off and on your mouth repeatedly to make an indian chant sound. Change the pitch of your voice, high and low, or make a variety of vowel sounds. If or when the baby vocalizes, pat the baby's hand on her own mouth.

9. Around 3 months of age, the baby will begin to exhibit a vocal-social response to your smile and talk. "As you bend over your baby, smiling, talking, and ministering to his needs, you encourage his responsiveness" (Caplan, 1973). Reinforce each of the baby's vocalizations by imitating them.

10. A child may begin to smile and vocalize to his image in a mirror. Begin by standing or sitting with the infant in front of a mirror large enough to see both of you. Smile, tap the mirror to attract his attention, say simple phrases like, "Hi. I see you." His attention at this age will be brief. An older child may want to bang on the mirror with his palms playfully.

11. At 4 months a child may begin to vocalize his moods. Tune in to the emotional content of the baby's vocalizations; imitate them; add simple words to express them.

12. Around 4 months a baby may begin to vocalize to initiate socialization. It is very important to pay attention to the baby when this happens and to reinforce him for using his voice to get your attention. Imitate him; use plenty of social reinforcers.

13. Around 5 months, the baby will begin to watch mouths closely and may begin to experiment with his own mouth movements, with and without voice. Encourage and reinforce this early form of imitation.

14. An infant may vocalize or coo to soothe himself after an upset or before sleeping, expecially if he has been sung to and rocked to sleep. Be aware of these important times. When they occur, imitate the baby's vocalizations; use smiles, eye contact, and gentle touch as reinforcement.

15. An infant may spontaneously vocalize when pulled up gently by his arms into a sitting position. To stimulate his vocalizations, say, "up, up, up" or "upsy-daisy" or whatever feels natural at this time.

SIX TO TWELVE MONTHS

16. Infants begin to make faces in imitations of adults. Encourage imitation skills both vocal and nonvocal. Use a variety of facial expressions at different times, one or two at a time, giving the child time to imitate each time.

17. Encourage the baby to vocalize by adding words to go with his body movements. If he is jumping in his walker, say "Jump, jump, jump." When he is pounding with his spoon on his high chair tray, say "boom, boom." When pulling off his shirt, say "Up and off!"

18. An infant will be most likely to vocalize to interesting, novel events. An older sibling who will do something silly to entertain and attract the baby's attention is an excellent stimulation for vocalization.

19. Begin name games with body parts, especially in songs.

20. An infant will begin to initiate social games with arm movements and vocalizations that his parents have played previously and consistently. Do not fail to respond to a child's initiating the games.

Some social games that babies traditionally enjoy:

Peek-a-boo
Pat-a-cake
Come and get me
Go and fetch
So big!

Any back and forth social game involving vocalization will encourge the child to use his voice. Reinforce his vocalizations with smiles, eye contact or touch. Say "I hear you"; point to your ear, and continue the game.

21. Encourage the child to vocalize by adding words and phrases to his meaningful gestures. Examples of gestures a child of this age may use: bye-bye, come here, up, nodding head yes, shaking head no, shaking finger no.

22. Introduce finger plays to encourage vocalizations. Those involving touch with fingers and toes are best at this age. "This Little Piggy" is good as is its Chinese variation:

This little cow eats grass,
This little cow eats hay,
This little cow drinks water,
This little cow runs away,
This little cow does nothing
But lie down all day. (Caplan and Caplan, 1976)

A finger play from Israel involving touching the baby's hand and arm:

Momma made some soup. (Move finger around on baby's palm)
She gave some to this one, (fold baby's little finger into palm)
And this one,
And this one, } (fold next three fingers into baby's palm)
And this one,
But this one didn't get any. (hold up baby's thumb)
So he went up, up, up (creep up baby's arm)
And found some! (tickle gently under arm or chin)

A finger play involving touch from toe to head:

Creepy, crawling little mousey (Fingers slowly creep along baby's leg and up trunk)
From the garden to the housey,
Jumped upon a little shelf, (jump fingers onto baby's shoulder)
Found some cheese
And helped himself.
Nibble, nibble, nibble. (tickle gently under baby's arm or chin)

23. Encourage the baby to laugh. This is a good way to stimulate vocalizations. At this age, watching a parent act surprised to a jack-in-the-box or similar surprise toy will delight a baby. Reinforce his laughter as you would any vocalization.

TWELVE TO EIGHTEEN MONTHS

24. After the first year, a child will begin to indicate his wants using a variety of means other than crying. He will understand and use many gestures, and he may vocalize. Reinforce his vocalizations by imitating them and attending to his needs. Stimulate his vocalizations by adding words and short phrases to go with his gestures.

25. The child will give items like toys or bites of cookie to adults. He may want them back immediately. Make a game out of this developmental step. When you take the offered item, say "Thank you." Quickly offer it back to the child, say "Here." Use good inflection. Repeat this simple game 3 or 4 times.

26. The child will laugh or giggle when chased or found hiding. Consider these as important vocalizations. Reinforce them.

27. The child will begin to vocalize to demand personal attention. Reinforce these vocalizations when appropriate to do so.

28. A child of this age enjoys activities that involve taking apart, taking out, and taking off. Help the child learn how to pull off his socks, saying "Pull it off, puuulllllll." Put a large hat on his head, playing a game of putting it on and taking it off. Add words, phrases, and vocalizations. Let him take the hat from your head.

29. Play a simple game of rolling a ball while sitting on the floor. A child of this developmental age can usually grasp and let go. Use appropriate words and vocalizations to match your and the baby's movements.

30. Depending on his hearing loss, the child may begin to move to music. Do not ignore the opportunity to dance with the child, imitating his movements and adding your voice in simple rhythms.

31. The child approaching 18 months enjoys picking up small items and dropping them into a container one by one. Try this with small toys, blocks or jar rings. As the baby drops each item, say an appropriate simple phrase over and over, like "Down it goes, boom!" You may be able to take turns with him dropping the items and emptying the container. Encourage this turn taking and reinforce all vocalizations with social praise and by continuing the game.

32. When the child begins climbing stairs, he usually begins by going up the stairs on his hands and knees. Proceed step by step beside him, adding vocalizations to match his movements. You could count "one, two, one, two" or say "up, up, up," or "good boy, one more step." Later when he can proceed up the steps standing, holding on to a rail or a hand, continue to add vocalizations to match his stepping movements.

33. When the child begins to stack blocks in towers of 2 or 3, play with him vocalizing each time one of you adds another block. You could count "one, two, three" or "up, up, up," whatever you feel is appropriate. It is not important what you say but that you add vocalizations to his movements. Take turns stacking the blocks and you may find the baby also taking turns vocalizing.

34. The child begins to really enjoy rhymes and jingles and finger plays. He may indicate that he wants to play a favorite one by beginning the appropriate gestures or by using the gestures plus vocalizations. Do not ignore these opportunities. If you have a mirror large enough, the child will enjoy seeing himself and you at the same time. Use the bathroom mirror with the child sitting or standing on the counter while you are standing behind.

35. Reaching from behind, gently hold his hands in yours and sing and make the following movements:

Roly-poly, roly-poly	(turn hands around each other)
Up, up, up.	(lift arms up, up, up)
Roly-poly, roly-poly.	
Down, down, down	(push arms down, down, down)
Roly-poly, roly-poly.	
Out, out, out	(move arms away from body)
Roly-poly, roly-poly.	
In, in, in	(move arms to center of body)

Use appropriate intonations to add meaning to vocalizations.

36. The child may increase the amount of vocalizations he uses to amuse himself during his solitary play, especially if he is receiving vocal stimulation at other times. These occasions should be rewarded appropriately but not interrupted. Give eye contact, a smile, and when you hear him pause, say "I hear you, good boy!"

37. A child of this age begins to actively imitate the actions of older siblings and parents. Encourage and provide appropriate opportunities for this. Imitation of gross motor activities is a predecessor of the imitation of fine motor actions necessary for speech. The child who is imitating his mother and father doing various household activities is also providing them with opportunities for social interaction and vocal stimulation. As you work around the home, allow the child to work alongside using the same tools and equipment as appropriate. Provide appropriate vocalizations to match his movements.

38. The child may begin to vocalize from his crib in the morning to get your attention. Respond to this. Let him see you to know that he has succeeded in getting your attention.

39. A popular game children play at this age is dropping an object from the high chair to get the parent to interact. Allow him to play this game with appropriate objects like soft balls, unbreakable toys, etc. Interact socially and vocally with him by picking up the object, saying "Oh, oh. You dropped it." Hand it to him, saying whatever short, simple phrases that feel natural. The parent whose back is turned may hear her child vocalize to call her attention to the dropped object in an attempt to start a game.

40. A child may begin to vocalize into the telephone in imitation of adult conversation. He may or may not be responding to a voice on the phone, sometimes he is just imitating the adults he sees chatting on the phone. Find opportunities to allow the child to do this with willing adults or with play telephones. Use pictures of people talking on the telephone. Smile and nod at the child to encourage him to continue his "conversation."

41. The child may vocalize to photographs of family members. Using an experience book or family album, talk to the child about each picture, naming the person. Change the pitch of your voice appropriately, kissing or patting the pictures.

42. The child may enjoy playing with large boxes as the first stirrings of imaginative play are emerging. Show the child how to crawl in the box, calling to someone, finding and saying "Boo!" Encourage any imaginative game that involves simple vocalizations and interactions as main components.

EIGHTEEN TO TWENTY-FOUR MONTHS

43. The child begins to enjoy and show more variety in scribbling with pencils and crayons. Provide opportunities for him to use large crayons appropriately. As he draws circles or lines back and forth, sing or provide vocalizations to match his physical movements. Join in and take turns.

44. Hidden object games are a major source of fascination. Using commercial toys or those of your own making, play a game with the child, saying, "Where's the ______? Where'd it go? There it is!" repetition during meaningful play is a key element to encourage the child to also vocalize.

45. Introduce simple puzzles. This is a form of the hidden object game (#44). As you help the child play, use appropriate questions and phrases, "Where does it go? There it is!" etc.

46. The child begins to enjoy pretend sleeping games when played with an adult or a doll. Use this interest in seeing other people sleep to stimulate vocalizations. Cover up the dolly, pat its head, say, "Night, night."

47. Child enjoys imaginative play involving eating; pretend to eat something inedible or nonexistent. Say "Want some more? Num-num" or take turns feeding each other small pieces of cereal and vocalizing appreciation.

48. Children become very interested in tiny things and comparisons with larger objects. Use these opportunities to stimulate vocalizations.

49. The child begins to enjoy putting things away or putting objects in containers. Take advantage of this interest by adding appropriate words and simple phrases to the child's movements.

Lesson 6 (Phase II)

Associating Objects And Events With Their Sound Source Activities
(Skill 3)

Note: At 5 to 6 months a child will begin to anticipate events that are signaled by visual and auditory clues. By 7 to 8 months he can associate specific sounds with events and will respond with excitement to the repetition of a signal for a pleasurable event. He may wriggle in anticipation of play cued by an auditory signal. These suggestions can be used for every age level when adapted to the interests and home enviroment of particular children.

1. Sing simple melodies to go along with different activities such as bathing, feeding, and dressing. Sing them before and during each event, repeating them often with good vocal inflection. After much stimulation sing a song before you begin the associated activity. Watch the baby to see if he is anticipating the event.
2. Call out to the baby before you enter his room in the morning or after a nap. Watch carefully to see if he is associating the sound of your voice with your arrival.
3. With baby on his back in front of you after diapering, hold large colored yarn pom-poms over his tummy and drop them, saying, "Here comes a pom-pom." He will begin to anticipate the pom-pom softly hitting his tummy from the visual and auditory cues. After much stimulation, remove the visual cues.
4. While baby is lying on his back, gently hold his feet and push them in a circular motion like a bicycle. Sing a simple phrase over and over, like "Baby's legs go round and round." At first include both visual and auditory stimulation. After a while, sing the phrase alone and see if the baby will kick up his legs in anticipation of the exercise.
5. Find some auditory signal that you can associate with feeding time. You may choose a special record, a favorite nursery rhyme or song, a toy with a distinctive sound, or a particular sound made during meal preparation as a spoon tapping on a plastic dish. Consistently present the auditory signal to the child just before and during feeding time. Give lots of social reinforcement for alerting or locating responses to the auditory signal. After much stimulation, present the auditory signal with no visual cues and see if the baby indicates anticipation of his mealtime.
6. Whenever you are about to pick up the baby, clap your hands, hold out your arms and say a short phrase, like "Up we go!" or "upsy-daisy." After much stimulation, give the auditory signal only to see if the baby will stretch his arms out toward you.
7. Whenever you are going to pick the baby up, put him down, change his diaper, or move him in any way, tell him what you are going to do. Give him a signal that a change is about to occur.
8. Sit the baby on one knee and bounce gently to a simple rhyme with a "surprise ending."

   Baby be nimble, one, two, three
   Baby jump to my other knee. (repeat)

He will learn to anticipate the ending and will smile and giggle before the ending comes.

9. Sing "Pop goes the weasel" and play with the baby in a manner similar to #8 above. When you reach "pop" bounce a little higher or raise the baby's arms high in the air. He will learn to anticipate the ending.

10. When the baby starts banging on his high chair tray with a spoon, see if you can get a back and forth game going. Say "bang, bang, bang" as you play so the baby can learn to assocate the phrase with the activity.

11. When the baby kicks his feet, say "Kick, kick" in rhythm to his feet. When he stops, you stop. Develop the session into a game of stop and go. He will learn to associate the sound with the activity.

12. Identify regular important events in the baby's day and find auditory signals to associate with them. For example:

daddy coming home	Knock on door, call baby's name, say "hi"
feeding time	Tap a spoon on plastic dish, say, "Are you hungry, want to eat?"
bathtime	Water running in the tub
bedtime	Special song or record, or your favorite bedtime lullaby
going in the car	Knock on the closet door, say, "Let's go bye-bye"

13. Play "So Big"
How big is baby?
Soooo big! (stretch arms)
How big is baby?
Soooo big! (stretch legs)

Soon he will anticipate the game and raise his arms to initiate it.

14. Sit, facing the baby, take a hand in each of your hands. Move his arms in repeated patterns, keep it simple (up and down, back and forth). If possible, choose a motion the baby frequently uses by himself. Add your voice in a simple repeated pattern, like "Sis, boom, bah." If the baby enjoys the game, begin the cheer without the arm movements and see if the baby responds on his own.

15. If the child has previously enjoyed playing peek-a-boo, give him a small blanket and see if he will begin the game on his own when you say "Peek-a-boo!"

16. While you are on all fours facing the baby, crawl dramatically toward him saying "Here I come" growling playfully. Lower head and quickly but gently bump your head into the baby's tummy. Return to original position and repeat. Later lower your head and say "Here I come" and growl to see if baby will anticipate the attack from the sound of your voice.

17. Sit with the baby facing you with his legs inside of yours. Hold the baby's hands. Gently lean back, pulling him gently forward. Sing "Row, row, row your boat." Lean forward gently pushing baby slightly back. Continue to go back and forth, singing and smiling as long as he enjoys the game. After many times of playing, begin singing first to see if the baby will begin the movement by himself.

18. Play "Ring around a rosy." At first help the child to "fall down" at the appropriate time. As soon as you are sure that the signal 'All Fall Down" is associated with falling, vary the rhyme so that 'All Fall Down" occurs at unexpected places in the song. See if the child will "fall down" with the auditory signal.

Lesson 8 (Phase II)

Locating Sounds And Voices In Space Activities
(Skill 4)

SIX TO TWELVE MONTHS

1. Use eye contact to stimulate locating responses while feeding or holding the baby close. Begin by stroking baby's cheek and calling his name. When you get good eye contact, smile and talk, maintaining good eye contact. Move your head slowly from side to side trying to hold the baby's attention with your eyes as well as your voice. If the baby breaks eye contact keep talking conversationally. He will initiate contact again when he is ready. If the baby cannot play the game and drink at the same time, play just after or while burping, or at diapering time or any time. Associate the parent's voice with eye contact and elicit locating auditory responses at a later time.

2. Sit behind but off to one side of the child. A child will locate best when the sound source is on his level in a direct line on either side of his head. Call his name or make an interesting vocal sound. When the child turns to find the sound, give lots of social reinforcement. If he does not localize, attract his attention to you by letting him see you. When he turns in your direction, smile and reinforce. This is the beginning of the locating response.

3. Brothers and sisters hide in bedroom on an unmade bed. Bring the child into the room and when he is in good locating position, signal the siblings to call his name. Help him alert to and locate the sound, then play more hide and seek in the blankets repeating and reversing roles.

4. Hide behind furniture or around corners. When the child is in good locating position, call his name or make an interesting vocal sound. If he doesn't respond, let him see you, then try again.

5. When coming home or entering a room where the child is playing, stick your head in and call the child's name. If child localizes, reinforce him. If he doesn't, approach him, capture his attention visually, call his name again, alert him to the sound of your voice.

6. Have friends or relatives call on the phone. Do this when the child is close to the phone in a good locating position, for example, in his high chair eating, with the phone directly to one side.

7. Arrange for someone to ring the doorbell when the child is in close proximity to the bell.

8. When the child is in his high chair, stand behind and to one side. Make a sound with your voice or an interesting sound source. It helps to have a second person in front of the child to keep his attention, alert him if he does not locate the sound, or direct his attention to the sound or person talking for reinforcement. Use edible reinforcers if appropriate.

9. Hold the child in your arms while another person goes behind a door. When the child is in good locating position, the person knocks on the door, then knocks again. If the child does not locate after three times, it is usually best to alert him to the sound and show him the sound source, then try again. If the child does turn correctly to the knock, open the door to see the person smiling and holding a funny toy, or edible reinforcers. Make it playful and rewarding.

interesting face. After repeated stimulation, make the sounds away from the baby's vision and watch for a locating response.

23. Play peek-a-boo from behind the baby, switching sides, cheek to cheek. Later, do not touch the baby, but begin the game with an auditory clue from behind and to one side. Watch for a locating response then move in with visual and tactile clues.

24. When you see the baby crawling from one room to another or along a couch or chair, get down on all fours around the corner. Begin calling the baby's name as he approaches. Peek around the corner and pull back as soon as he sees you. Or wait until the baby passes you in good locating position, call his name and watch for a locating response.

TWELVE TO EIGHTEEN MONTHS

25. Have different family members make sounds with their voices or sound sources at the dinner table. Help the baby to locate the person making the sound. Be aware of vibrations that the baby may be responding to and also the best locating position for the baby.

26. Hide under a blanket as the baby enters the room. When he is near, pull off the blanket and say "boo" or call his name. Child locates the voice.

27. When the child is in the bathroom, turn on the water in the tub, sink, or flush the toilet. The child should turn in the correct direction.

EIGHTEEN TO TWENTY-FOUR MONTHS

28. Hide a small wind-up noisemaker under one of two overturned bowls. Place them far enough apart for the child to locate the one where the sound is coming from. Let the child hold the sound source and make the sound himself once he locates it.

29. When the child is outside playing, have family members knock on picnic tables, mail boxes, or garbage cans that are close to the child, or call the child's name. Alert the child to the sound if he doesn't locate it after three tries, then try again.

30. Hide a squeak toy under a rug. When the child is crawling or walking by and is in a good locating position, step on the toy to make the sound.

31. Put raisins or other noisy edibles in a container with a lid. Shake the container out of the baby's vision, making a sound. When the child locates, then let him figure out how to get the treat out.

32. Put a small favorite sound toy in your pocket. When the baby is in good locating position, make the sound, then let the baby dig the toy out of your pocket by himself.

TWENTY-FOUR TO THIRTY MONTHS

33. Hide different sound sources in different rooms. Help the child to locate the sounds as you move from one room to the next.

34. Get several chairs and cover them with blankets. Hide a wind-up noisemaker under one blanket on one of the chairs. The child should locate the correct chair. Reverse so that the parent is trying to locate the sound after the child has hidden it.

THIRTY TO THIRTY-SIX MONTHS

35. Several people play this game. One person is "it." "It" points to someone (the child). The child closes his eyes. "It" moves to a new spot and says "Boo!" or calls the child's name. The child locates the sound and opens his eyes. Take turns.

Lesson 10 (Phase II)

Stimulation Activities For Vocalization Varied In Duration, Intensity, and Pitch

(Skill 5)

A child's ability to imitate speech begins around 6 months when he may begin to imitate the inflection of his mother's voice. At 8 months he will begin to imitate mouth and jaw movements. His imitation abilities grow until 11 or 12 months when he will imitate with fair accuracy speech rhythms and inflections. By 18 months the child, when requested, will imitate freely in play situations many different nonsegmental voice patterns and some simple specific speech sounds.

TWELVE TO EIGHTEEN MONTHS

1. To stimulate the child to sustain vocalizations for a 3 second period, run your finger slowly down the child's arm from his shoulder to his wrist as you vocalize. Vowel sounds such as *a* as in father, *u* as in rule, and *o* as in cold are appropriate to use. Or vocalize as you run your finger down the child's leg from his hip to his ankle.

2. To stimulate brief sound such as ba, ba, ba, tap the child's upper arm, elbow, or wrist as you say the sounds. Tap the child's upper thigh, knee and ankle, or tap the rhythm on the back of the child's hand.

3. To stimulate a combination of long and short utterances, run your finger from upper arm to elbow for a long duration then tap elbow or wrist for short duration (ba . . ., ba, ba). Match your movements to the vocalizations any way that the sounds can be varied. Use any combinations of three to six syllables. Stimulating a child to vocalize with a variety of sound durations on one breath will encourage good speech breathing.

4. When you are rocking the child in a rocking chair, match your vocalizations to the length of the rock, either brief or sustained. "Rock, rock, rock" can be uttered in a chant. Children will usually imitate this when done consistently. Do the same thing if you are walking with or swinging the child. Use a syllable or words, "walk, walk, walk," or "swing, swing, swing," matching your vocalizations to the child's movements.

5. Think about what your mouth and voice are doing when you are reciting a favorite nursery rhyme or song, then pair that with an appropriate body motion.

6. When playing with play-dough, make long and short snake shapes. Run your finger along the snakes making voiced sounds to correspond with the length of the various snakes (do . . . . for a long snake, do, do, do for three short snakes). Help the child to run his finger along the snakes while listening to your voice make sounds of different durations.

7. With the child lying or sitting on a blanket, pull the child across the floor, matching your voice to the movement of the blanket. For a long pull, make a long voiced sound. For several short

pulls, make sounds of equal duration. You can do the same with a child in a box, either pushing from behind which puts you in an excellent position for auditory stimulation or pulling with a rope in front. This is fun for all ages and good vocal stimulation because the child gets multi-sensory stimulation.

8. In the child's experience book, assemble or draw a swing, teeter-totter, and slide playground picture. Be sure the child has had experience on a playground. Use your finger or the child's finger on the playground picture to model vocalizations of different durations as you move your finger up and down, back and forth on the playground picture.

9. Whenever touching or tickling the child, match your voice to the movements of your hands, matching the auditory with the tactile. Using any sound, vocalize with utterances of different durations. You can use sounds that the child consistently uses.

10. A child will begin to scribble with pencil or crayon around 14 months and by 17 to 18 months can imitate simple strokes. When you are playing wih the child, show him how to scribble, matching your vocalizations to the movement of the crayon on the paper. Vary the vocalizations according to the skill you are modeling, varying duration or pitch. Around 21 months a child can imitate a circular scribble. Encourage turn-taking, handing the crayon back and forth as you scribble and vocalize. If done consistently, the child will begin to vocalize as he scribbles although he will not match his movements and vocalizations with accuracy.

EIGHTEEN TO TWENTY-FOUR MONTHS

11. Outline your hand and the child's hand and/or feet on a paper or in the experience book. You may want to include father's hand and foot. When you talk about the big hands use a deeper voice. Use a higher pitched voice when you talk about the small one. Or you may use loud and soft voices instead. This also can be done when you are comparing your shoe sizes, clothes or any large and small similar items, like bowls, dishes, towels, spoons, etc

12. Holding the older child's hands or having the smaller child sitting on your lap or in your arms, say "jump, jump" using auditory stimulation. You can use any other vocal sound that you want. At the same time jump the child gently corresponding the movement to your voice. Vary the number of beats from one to three, always pairing the voice and the movement.

13. Be sure to model whispering, and give frequent opportunities for the child to hear whispers. A child who can whisper is really learning how to control his voice. Use the "wake up" game with a loud voice and "go to sleep" with a soft voice or whisper. Also find or draw pictures to illustrate these activities. Stimulate vocalizations, by matching your voice with the picture as you talk about it.

14. A child will be stimulated to utter a string of syllables when you circle the palm of the child's hand continuously with your finger as your vocalize.

15. Play a game of ball with the child, matching your vocalizations to the movements of the ball. For example, one time bounce the ball to the child, saying, "ba, ba, bounce," vocalizing each time it hits the floor. Another time, roll the ball saying, "rrrrroooll" in a long utterance. You may want to substitute other sounds for the words "bounce" and "roll."

16. To stimulate the child to vary the intensity or volume of his voice, pound your fist, use a mad face and vocalize loudly. You could stomp your feet and achieve the same result. To get a very loud emphasis, stomp and pound simultaneously as you vocalize. Most children will enjoy imitating this in playful situations, but don't expect accuracy at first.

17. To stimulate the child to use a quiet voice do the same as in #16 above but in a much lighter, relaxed way with a softer facial expression.

18. On a large piece of paper draw lines of different lengths, some short, some longer. Play with the child's toy vehicles on the lines using them as roads. Vocalize utterances of different lengths as you drive the vehicles on the lines. You could choose any vocal sound or word that seems appropriate like "go," varying the length of the vowel sound, or "r-r-r" like a vehicle sound. If possible, choose a sound the child already uses as he is more likely to imitate the varying length of utterance.

19. Vary activity #18 by putting lines of masking tape of varying lengths on the carpet. The child can drive his vehicles on the lines or you can show him how to walk on the line, varying the length of your vocalizations to match the length of the line.

20. Tape paper footprints on the carpet. Model vocalizaing as you step on each print in the line. Or make some footprints large and some small, model using different vocal intensity or volume as you move from print to print. Encourage imitation. You may want to make the footprints using an outline of the child's shoe as he watches. It would be fun to have a trail of footprints leading behind a couch or into another room to find a surprise.

Changes in the length of vocalization require different breath capacities. A child who can vary the length of his utterance on one breath is developing good speech breathing.

Lesson 12 (Phase II)

Speechbreathing Activities
(Skill 5)

The following suggested activities are not blowing exercises for the young child, but rather playful home activities allowing the parents to model control of their breath streams while not *requiring* the child to imitate, but only to develop awareness.

1. The child should sit on the parent's lap during fun blowing activities. In this manner, the child can feel the midsection movement of the parent's breathing naturally, without placing unnatural emphasis on it. The parents should avoid promoting unnatural speech breathing habits such as raising their shoulders during breathing. It may not even be necessary to mention this unless the parent advisor sees the parent modeling inappropriate breathing.

2. During relaxed moments, have the parent lay or set a small child on his/her stomach. The parent breathes normally and quietly allows the child to feel the movement involved in diaphragmatic breathing. Laying on the floor on the back emphasizes the movement of proper breathing. The parent should also vocalize during this time, varying the length of the utterance. Singing would be a natural thing to do or recite a favorite fingerplay or nursery rhyme. At other times, when relaxing together, the child could lay his head on the parent's midsection or when lying on the child's bed before bedtime, the parent could casually place the child's hand on the midsection while singing or vocalizing, allowing the child to feel the speech breathing.

3. The parent should allow the child to feel the force of the breath stream. This may be done in several playful ways:

(a) During some blowing activities, the parent puts a cheek next to the child so the child may feel the breath stream rushing past his cheek.

(b) The parent can blow on different parts of the child's body in playful ways; for example, blow a path up the baby's arm, on his palm, on his tummy, on the soles of his feet.

(c) The parent should model both a long, continuous breath and a pulsed breath stream in appropriate activities, with and without vocalizations.

4. Use a variety of materials for blowing activities.

pinwheels
bubbles
feathers
candles
matches
balloons
whistles
harmonicas
cotton balls
ping-pong balls
kleenex
straws

5. When modeling continuous breath stream, strive for duration of 35 seconds. This models the conservation of the breath necessary for skilled speech.

6. Model lots of whispering in appropriate situations. Whispering teaches the child to push through the breath stream and encourages good breath control.

(a) Putting the baby or dolly to sleep in real or play situations.

(b) When reading stories in which someone is sleeping.

(c) When sneaking up to surprise someone.

(d) Using a whisper and a loud voice as contrast when trying to wake a dolly or sleeping person.

(e) Whispering begins with simple blowing which the child imitates; the parent whispers pa-pa-pa, the child imitates. Work auditorally as much as possible.

7. Bubbles can be made from soapy water and looped fine wire. A bit of cooking oil added to the soapy water should strengthen the bubbles and cause them not to break so easily. Model blowing on the bubbles to keep them up or moving.

8. Collect paper punch holes or confetti. Put them in a small box with clear plastic wrap over the top secured with an elastic band. Poke a small hole in the plastic wrap for blowing through. If the confetti is multi-colored, it is even more fun. The younger child will at first not know how to purse his lips to direct his breath through the hole. A straw inserted through the hole will help him learn. Children automatically wrap their lips around a straw once they learn how to use one.

9. Collect several handfuls of confetti. A little at a time, put some in your palm and blow to set them flying into the air. The child will squeal with delight and enjoy the delightful mess this makes all over the floor. Take turns with the child. Don't forget the last step, the vaccum or broom.

10. Taking the child's hand, blow while patting his hand on your mouth. This is like an Indian chant with no voice, only breath. Let him feel your breath.

11. Select blowing activities that match the developmental stage of the child in case the child wants to participate. For example, a younger child will not be able to aim his breath at a moving target like a bubble, feather or balloon in the air. Stationary targets would be best at younger ages. For toddlers, games that involve action are best. For instance, mom blows a ping-pong ball across the table and the child retrieves it, then changes places. Simple but effective.

12. Anything that helps direct the child's breath stream will help him to blow and modify the breath stream, also adding variety to activities. Use straws or narrow cardboard tubes, etc.

13. Secure a piece of nylon stocking over the top of a paper cup which has confetti in the bottom. The child and the parent blow into the cup to make the confetti fly.

14. Be sure the child voices on the exhaled breath when he is imitating paired voice and speech breathing activities.

15. It is fun for parents to inflate their cheeks with air, place the child's hands on the cheeks, then blow the air out, letting the child feel it.

Lesson 13 (Phase III)

Locating Sound Source At Increased Distance and Levels
(Skill 6)

TWELVE TO EIGHTEEN MONTHS

1. Always use auditory stimulation to get the child's attention when across the room. Call his name, or use some other sound, but always give him a chance to hear you before you catch his attention visually or tactually.

2. Select sounds to which the child has alerted or located. Present these same sounds at increasing distances.

3. Play music on the phonograph or radio during moments of quiet play.

4. Every time the doorbell rings, alert the child; by that time it will have rung again. Take the child to the door and open it for the visitor. It is nice to have a willing family member or friend who will say "Hi" to the child and shake hands. When done consistently, this activity brings results.

5. When the child is playing quietly in his crib, ring a bell from various places in the room.

6. Put music on the phonograph, pick up the baby, move at least 10 feet away, and dance to the music. Stop when the music stops; start again when the music starts.

7. Parent advisor should knock on the door when coming for a home visit. Inside the house, alert the child if he doesn't locate the sound; then take him to the door.

8. When the child it across the room, knock on a door while peeking in to see if he has located the sound. Have the child's favorite toy or pet behind the door or wear a funny mask. Knocking on the door ceases to have meaning as an auditory stimulus for the child unless it is paired with social reinforcement. As the child's memory improves, be aware that he may become bored and tune out repetitions of the same sound stimulus.

9. You can use the telephone as a distance sound stimulus if the baby has alerted to it before and seems interested in it.

10. "Shaping" is the most successful teaching method to use with small children. Shaping breaks the task into small manageable steps and becomes valuable when trying to get a crawling or walking child to find a distant (hidden) sound source. Give the baby experience locating the sound at close distances then slowly increase the distance until the sound is out of sight but the child is still locating. The sound source must be motivating and paired with social reinforcement.

11. The child may fear separation from his mother, especially when a non-family member is present. Be aware of this possibility when structuring distance hearing activities.

12. When the child is in another room or across the room, the mother attracts his attention from beyond 10 feet by saying "Peek-a-boo" or another phrase from a favorite social game of the baby. A child may begin to turn at his name after 6 months of amplified hearing.

13. When the child is playing outside, knock on a window from inside the house. When the child locates the sound or is alerted to your presence by another person, do something silly (like a crazy dance or a funny face) to motivate the child to look next time.

14. If the baby gets nervous and begins to call out anxiously when you leave the room, call to him from the other room to reassure him of your presence.

15. When you are in another room, call when you approach him. Call his name and say "Where are you?" If he is crying, he may be reassured by your approaching voice. If he is playing quietly, he may start to look for you.

16. When you are outside with the child, call to him from across the yard when he is not looking. If he turns to your voice, wave and run over to him in a comical way to reinforce him for locating you at a distance.

17. Honk the car horn when returning home. Honk three times with a pause in between to give whoever is in the house time to alert the child if necessary.

18. Call attention to all distant sounds. Alert the child, point in the direction of the sound. If possible, take the child to the sound. Be aware of these sounds:

cars honking
trucks, motocycles passing
children shouting
lawn mowers
phone ringing
doorbell
stereo and t.v.
doors banging
fire engines
sirens

19. One parent sits on the bed with the child and a blanket. Another parent knocks on the door or stamps down the hall. Mother alerts the child to the sound saying, "I hear Daddy. Let's hide." Parent covers herself and the child with a blanket as the other parent comes closer and closer, calling "Where are you?" The parent finds the child under the blanket, saying "I found you" and pulls the blanket off. Sequence of events will have to occur rapidly at first until the child understands the game and can wait under the blanket.

20. Family members sit around the edge of the room. Call to the child or use a sound toy to direct the child's attention. The child locates the sound. The person who called holds out their arms for the child.

21. Tie a bell on one foot of the walking child.

22. Hang a bell on a plant or lamp hook with a string dangling down. Pull the string out of sight of the child, the child locates or alerts. Let the child ring the bell, or make the string long enough so that the child can ring it by himself.

23. Some toys have a rubber tube with a squeeze ball on the end with which to make the sound. Place the toy on the floor by the diapering table or under the crib. Step on the squeeze ball producing the sound. The child then locates or alerts to levels below.

24. While the child is in the high chair during feeding time, use a bell or rattle below him.

25. Hang a bell from the ceiling above the diapering surface. Around 8 months the child is able to perceive the connection between physical contact and causality. Brush the bell with his hand to produce the sound so that he becomes familiar with it its location. When he is not looking, ring the bell and help him to locate levels above.

26. Put bells, music box on the shelves above the dressing table or crib.

27. Place noisemakers, radios, or other sound makers on high shelves or places in each room, so you can take advantage of opportune moments when the child is in a good place to stimulate instead of having to run and find a good sound producer.

28. Hang wind chimes near a window or with a string attached so the child can produce the sound himself.

EIGHTEEN TO TWENTY-FOUR MONTHS

29. Around 20 months a child will begin to enjoy simple hide and seek games with adults or toys. At first the child will need guidance to play. If you have a short hallway with several doorways, close all the doors and hide behind one. Begin knocking and calling the child's name. Another person will alert the child to the sound if necessary, then take the child down the hall looking into rooms. At one point the child will locate the sound, and be able to find the hiding person. If the child cannot turn the door knob by himself, knock on the door where the person is hiding as a clue to open the door.

30. Collect or borrow a couple of wind-up alarm clocks. Put them in different places in the same room or in separate rooms. Set the clocks for different times. Reward the child if he turns toward the sounds at a distance and allow him to play with the clock.

31. If the child responds to music, set a radio alarm clock to go off during the day. If necessary, help the child locate the sound.

32. If the child delights in throwing things off the high chair, tie a small bell or sound toy to the high chair. This can be easily retrieved by the child by hauling in the string. Also the sound toy is readily available to the mother to stimulate levels below if the toy is hanging on the chair.

33. Point out sounds in the basement or upstairs. Take the child to the source of the sound or voice whenever possible. When eating be aware of sounds under the table such as the dog or feet stomping. Point out electrical appliances in cupboards or the clock on the wall.

34. Put the child on the table. Sit below the table and make a sound or call the child's name. Child looks down to find the sound. Change places with the child.

35. Have the child on a stairway and someone above him and below him. The child must turn to the person who is calling him.

36. Go on a listening walk with the child in a stroller or buggy. Point out birds in trees, airplanes, or other high sounds.

TWENTY-FOUR TO THIRTY MONTHS

37. A two year old who recognizes his name will usually come when called. Call the child to dinner or to go bye-bye.

38. Hide in a different room and call to the child until he finds you. A brief glimpse of you running down the hall to hide will cue the child that a game of hide and seek is starting.

39. Hide in another room and blow a whistle or honk a bike horn until the child finds you.

40. Family members hide in different rooms with various noisemakers. With a combination of sound and voice the family members take turns attracting the child's attention. Tape recorder, radio, portable t.v., alarm clock, timer, or other noisemakers can be used.

41. To help motivate the child to locate the telephone when it rings, make a little telephone book on 3×5 cards, containing pictures of 3–4 people who call regularly and would be willing to talk to the child. Alert the child. If necessary, take him to the phone, say "Hello," show him the pictures of the person calling. Allow him to talk for a moment.

42. Some distance sounds are distant and cannot be seen. If the child alerts to the sounds, use the experience book or make a special booklet illustrating distance sounds that frequently occur outside the home. Draw or find pictures of distance sounds: airplanes, sirens, birds, children shouting, cars, or bells. The child should have prior experience with actually seeing the sound source, so that when the sound occurs at a distance, you can alert the child to the sound and show the picture in the booklet.

43. At mealtime, whenever someone leaves the table to get something, have that person make a noise or call the child's name from a distance before returning to the table.

Lesson 14 (Phase III)

Stimulation For Vowel And Consonant Activities
(Skill 7)

EIGHTEEN TO TWENTY-FOUR MONTHS

1. As the child feeds himself or is fed with a spoon, say "m . . . ." or "um . . . ." at the end of each bite. Nod your head and look expectantly; wait for the child to imitate you. Reward him if he does.

2. Each time you pull the child up or he raises himself to a standing position, say "up, up, up," smile and reward him if he imitates.

3. As the child carries his spoon to his mouth, babble selected sounds in sequences of 3 or 4 repeated syllables.

4. To help stimulate the child to imitate you, imitate with excitement his actions as well as his vocalizations.

5. Associate phonemes with the motor activity the child is interested in at the present time; for example, /o/, while throwing and say, "throw."

6. If you are stimulating for a tense vowel, use a tense motion; if you are stimulating for a lax vowel, use a lax motion.

7. Avoid using the same movements for different vowels during the same play session. You can use the same movements if the consonants are produced in the same manner, i.e. all fricatives could be stimulated using the same arm or body movements.

8. If you are working on short vowels, keep your hands in close to your body when providing movements to match vocalizations.

9. Many of the activities suggested for Phase II, *Stimulation For Vocalization Varied in Duration, Intensity, and Pitch* can be used to stimulate specific vowels and consonants. Review those activities that proved successful for the parent and the child and those that may not have been appropriate because of maturity level. Repeat these activities, adapting them to stimulate for specific vowels and consonants.

10. To stimulate for the vowels *a* as in father and (i) as in team, push your hands, palms forward in front of your chest quickly as you say "wa," then sweep your hands up and out as you say "wiiiiii." Hold the child's arms gently and help him imitate your arm movements and vocalizations. You can stimulate for pitch changes this way also because as the child raises his arms in the air, his pitch will naturally rise. Make the "wa" low pitched and the "wi" high pitched.

11. Stimulate for *p* by whispering "pʌ, pʌ, pʌ," holding your hand in front of you, and opening and closing the index finger and thumb to match the movement of your lips. Use your fingers again in a light flicking movement as you say "tʌ, tʌ, tʌ" to stimulate the child to imitate.

12. Pick any activity the child likes to do and produce a selected sound with it as he does it. Imitate his movements and change your pitch to match the movements. Pause and show by facial expression that it is his turn to produce the sounds.

13. Make a "panting" sound to stimulate *h*. Use it in meaningful situations such as when you are tired from running or on a hot day. Say and whisper the word hot in meaningful situations throughout the day. Pause and expect the child to imitate you.

14. Play a game where you fall down with your feet flying in the air, saying the word "down" with strong emphasis. Reinforce the child for imitating your actions, and expect him to imitate your speech. Imitate him in turn as he varies the game. Repeat the sequence.

15. Stimulate for the *au* sound by saying "Ow!" as you pretend a stuffed animal or puppet bites you. Pretend with him and wait for him to say "Ow!" If he does not, say it for him after a pause. Use the word "ow" in meaningful situations throughout the day.

16. Make a train from blocks and say any vowel you choose as you push the blocks along. "Whoo, whoo" or "choo, choo" are very natural.

17. Practice *m* by eating individual pieces of dry cereal for each "mmmm" or "more." Take turns with the child asking and receiving more. Babies of this age usually enjoy feeding their parents.

18. Use a hand puppet with a mouth to stimulate for sustained vocalization of any vowel by producing the sound when the puppet's mouth is open. Give the child the puppet and expect him to vocalize for the puppet. It will help to have the puppet vocalize for a purpose in addition to stimulating for the vowel. For example, the puppet could be greeting someone at the door, talking to a dog, putting a dolly to sleep, quieting baby sister, or talking on a phone. A child is more likely to vocalize in natural conversational situations like the ones he sees every day.

19. As you pour milk for meals, sustain a vocalization of a selected vowel sound until the glass is full. Encourage the child to vocalize as you pour. An older child can sometimes play a game where you pour only when he is vocalizing, stopping when he stops, continuing when he vocalizes again.

20. In the bathtub, vocalize while you move a toy boat across the water, stopping when you reach the edge. Encourage your child to imitate you, vocalizing continuously. Use varied pitch.

TWENTY-FOUR TO THIRTY-SIX MONTHS

21. Make a small garage from a box or use a space under a chair. Move a toy car across the floor, stimulating for a selected vowel or consonant sound varying the length of the distance the child has to travel to get to the garage, thus varying the length of the utterance. If he has a small truck, drive to the garage, pick up a small bit of food, like crackers or cereal, and drive back to the child. The child will participate longer and enjoy it more if the play is creative and imaginative enough to capture his attention. Take turns.

22. Play in the sand with the child, pouring sand from one container to another, vocalizing as you pour until the container is full.

23. Imagine a road along the top of a table or on a play surface. Make a stop sign resembling a real one. As the child approaches the stop sign, traveling on the road with a toy car or motorcycle,

he vocalizes until he meets the stop sign. Have a little figure of a person ready to walk across the road in front of the car, which then proceeds down the road. Take turns, pretending and modeling both sides of the game for the child. Model vocalizations of varied length, both continuous and interrupted.

24. If the child has a variety of animal and people figures, hold races on a table top. Start with two or three figures, showing the child how each one moves, using varied sounds and lengths of vocalizations.

25. Make three paths of different lengths on a table top or playing surface with masking tape. Show the child how his first two fingers can walk like legs. You may paint a little face on the back of the child's hand just above his first two fingers. This will increase his fun and motivation. Show him how to vocalize or sing as his fingers walk down the paths.

26. When you pet the child's real dog or cat, vocalize with each pet. It is fun to do the same with stuffed animals.

27. Place the child's hands on anything that vibrates as you vocalize into or in contact with it. This works with a balloon, a paper tube or a kazoo.

28. Put little people figures at various places around the room. Fly the child's toy airplane around the room, vocalizing as you fly from place to place, picking up the people and putting them in the plane.

29. Play a game where the child imitates your body movements as well as your vocalizations. Start very low to the floor; as you raise yourself to a standing position, vocalize with a selected vowel or consonant. Reverse the direction of the movement. Siblings can help in this game as it works well as a group activity. Then they can think of other movements to do, always matching their movements with a vocalization.

30. Can the child play follow-the-leader? If so, jump, run, crawl, slide, hop, and run around the room, vocalizing with the same selected sound but varying it to match your movements. After each movement, stop, wait for the child to imitate.

31. Many children will vocalize into a microphone because they have seen people on television do it. Almost any long object can be a pretend microphone if you haven't a real one. Vocalize into it and then hand it to the child. Vocalize and dance at the same time as if performing and let the child take a turn.

32. Find any object that moves easily with even a small bit of air, like a small pinwheel, a soft feather, a bit of tissue paper. Using a selected consonant breath sound, say the sound causing the object to move. Sounds to choose may be *p, t, k, h, f, th, sh, ch* where the breath stream is fairly forceful and obvious.

33. Drive a toy car into a stack of blocks, knocking it over and vocalizing as you move the car.

34. Move a puppet or your hand slowly toward the child while vocalizing and then tickling the child when it reaches his tummy.

Lesson 16 (Phase IV)

Discrimination And Comprehension Of Environmental Sounds
(Skill 8)

EIGHTEEN TO TWENTY-FOUR MONTHS

1. Put on some music using radio, stereo, or piano. Clap your hands, pat your tummy, flap your arm, stamp your feet, swing, hop or turn around to the rhythm of the music. Find a movement that the child likes to imitate. Choose music with a contrasting fast and slow beat. Model moving with the beat. A child may begin bouncing in rhythm to music about 21 months.

2. Dance with the child in your arms to music with a contrasting fast and slow rhythm. Sing or whistle to emphasize the beat.

3. Assemble a family rhythm band. Use play horns, pans to bang, oatmeal boxes to drum, sticks, or bells. Emphasize and contrast fast and slow beats. Introduce different body motions. For more ideas on making family rhythm band instruments, contact SKI*HI Institute, UMC 10, Utah State University, Logan, UT 84322.

4. March with the child to the beat of a drum. Use small, soft steps for a quiet drum beat, then loud large steps for a louder drum beat. Take turns marching and beating. Observe carefully to see if the child is paying attention to the intensity of the drum beat. At this age he will need frequent modeling; he derives pleasure from the movement and play.

5. Do the above activity (#4) except contrast fast and slow beats. Model moving with fast steps and slow steps to match the beat of the drum.

6. Choose two puppets and two contrasting sounds, for example a whistle and a drum. One puppet dances to one sound, the other dances only when he hears a different sound. Help the child to discriminate or imitate your movements with the puppets. After modeling and stimulation, see if the child can respond on his own with the correct puppet. Finally, play the instruments out of the child's visual range to see if he can choose the correct puppet using auditory information only.

7. Wave your arms or a small flag or cloth in response to fast and slow music. Gently direct the child's arm movements to keep pace with the music, gradually releasing control.

8. If the house has front and back doorbells, they may have different rings. If the chimes are located near the center of the house, this can be a fun discrimination activity with lots of movement and surprises.

9. Imitate loud and soft sounds with loud and soft banging of a wooden spoon on the table or high chair. Exaggerate the difference between the loud and soft banging so the contrast is evident to the child. After frequent stimulation and modeling, see if the child can respond on his own.

10. Stimulate discrimination of loud and soft sounds by waking up a sleeping doll or person with a loud sound and demonstrating that a soft sound does not wake him up. Children begin to enjoy wake up games around 20 months of age, although they do not prefer to be the person who pretends to be asleep.

TWENTY-FOUR TO THIRTY MONTHS

11. Use the child's experience book or make a separate scrapbook of things that make sounds. Pictures of cars, dogs, a person knocking on a door, a person walking up the stairs, a motorcycle, alarm clocks, or radios are some that may be appropriate. Find the actual item, listen to the sound, closely associate the real item with the picture, listen to the sound again.

12. Search for new and familiar sounds around the house. Take one small sound source from each location in the house - kitchen, workshop, bedroom, or bathroom. Gather the items in one place. Present the sounds auditorally to the child. The child then returns the item to its proper room. The game needs to be modeled many times. This is a good game for involving siblings.

THIRTY TO THIRTY-SIX MONTHS

13. Find a large box with a top that opens, cut a large hole in both sides. Find a familiar sound maker. Without letting the child see, put the sound maker in the box and have the child listen to the sound. The child then tells what he hears. This requires language to label the items or the ability to point to pictures of the correct items.

14. Record familiar sounds for a discrimination game using a cassette tape recorder and the experience book. Find or draw a picture of each sound. Closely relate the picture with the actual object. Listen to the sound, point to the picture. Record the sound, then listen to the sound on the tape recorder. Closely relate the picture to the sound. Listen to all the sounds, helping the child point to each sound as he hears it. Later record the sounds in different order for a "Listen and Point" discrimination game.

15. Buy or make a storybook showing a child or parent reacting to sounds during the day followed by natural consequences. For example, one picture may show a mother hearing the telephone, the next picture would show the mother answering the telephone.

16. Children enjoy whistles, toy horns, and harmonicas, although they may imitate the sound using their voice instead of blowing. Using one whistle or two identical ones, take turns blowing long and short sounds. It will help at first to have a third person who will model how to imitate the same sound that he hears.

17. Helping a child discriminate the number of beats is best approached by shaping. Begin with 1 drum and drumstick. Take turns beating on the drum one, two, or three times, then give the drumstick to the child for him to take his turn. Make your turns short so the child doesn't have to wait long for his turn but insist that he imitate the number of beats before going to the next step. At this time the child is imitating both visually and auditorally. Next give the child his own drumstick. Beat the drum and let the child take his turn. Be sure he takes his turn and imitates correctly before going to the next step. Next both mother and child have a drum and a drumstick.

Take turns. Once the turn taking is established and the child can imitate using both visual and auditory cues, remove the visual cues by turning the child around or putting some kind of a shield between the drums.

18. Children enjoy playing hide and seek with their own toys. If the child has 4 or 5 toys with distinctive sounds, record them using the techniques mentioned in activity #14. Hide the toys under couches, chairs, in drawers, letting the child watch and help. Listen to the taped sounds, helping the child identify the sounds and then retrieve them from their hiding places. Record the sounds in a different order.

19. Find or draw pictures of things that make soft sounds and loud sounds. Loud sounds might include car horn, baby crying, motorcycle, or dog barking. Soft sounds might include a bird, water running, door bell, or whispering. Listen to the sounds either from the actual objects or a recording, identify and categorize them.

THIRTY-SIX MONTHS AND OLDER

20. Some preschool children with good attention spans enjoy auditorally matching shakers. Make two sets of matching shakers. Start with a small selection of two or three widely contrasting sounds. For example, in small plastic see-through bottles with secure lids put unpopped popcorn, beans, paper clips, or marbles. At first allow the child tactile, visual, and auditory clues by letting him hold and look at the clear bottles while matching. Then cover the bottles with tape and allow the child only tactile and auditory cues to help with matching. Then using auditory cues only, have the child listen and match shakers while you shake the bottles.

Lesson 17

Discrimination And Comprehension Of Gross Vocal Sounds
(Skill 9)

EIGHTEEN TO TWENTY-FOUR MONTHS

1. Pop some popcorn. As it begins to pop in the popper, imitate the sound for the child saying, "pop, pop, pop!" Cue the child to listen to the popcorn and your voice. In all cases, where you expect the child to imitate an onomotopoeic sound, pause after making the sound, look expectant, give the child a chance, and then proceed. As you eat the popcorn, bounce a piece through the air into your mouth, saying, "pop, pop, pop," matching your movements to your voice. Give the child a piece and encourage him to imitate the sound. Draw a page in the experience book showing the popper and the child. You can "pop, pop, pop" pieces across the page into the child's mouth.

2. Find a box and fill it with a variety of onomotopoeic sounds. Use little figures or pictures. Present only one sound at a time. Say the sound and let the child listen. Show him the item and say the onomotopoeic sound again. Pause, look expectant, wait for the child to imitate, then proceed. Play with each item and go to the next one. After a period of stimulation, put two of the items in front of the child, say one of the appropriate sounds and indicate that you want him to choose one and put it in the box. Children of this age enjoy dumping and putting away. Slowly increase the number of items from which he must choose the correct one.

3. Make or purchase a rug city with vehicles to play with. Using the same stimulation techniques as mentioned in activity #2 encourage imitation and discrimination of the gross vocal vehicle sounds.

4. Gather the child's toy vehicles together, build a garage from a box. Play with the vehicles, using contrasting onomotopoeic sounds like "er-r-r-r" and "putt-putt." Park the cars in a line and drive them into the garage one at a time, using sounds, encourage the child to imitate and discriminate.

5. Obtain a large box with holes cut in both ends. Put several toy animals or vehicles in the box. Reach in and pull out one toy, saying the onomotopoeic sound as you do. Pause, look expectant, and wait for the child to imitate. Move the toy out, up and over the box to the child. Take turns if the child understands the routine. After all the toys are out of the box, arrange them on top. Say one of the sounds and tell the child to choose the appropriate toy to put back in the box. Encourage imitation and discrimination.

6. Around 20 months of age, children may enjoy pretend eating and sleeping games. Select several toy animals. Pretend to feed each animal a small piece of food like a Cheerio, using the animal sounds. Include a small bit of water. Include a few of the animals in the child's regular meal time if it doesn't prove too distracting. Indicate to the child which animal is hungry by saying the

appropriate animal sound, then help the child choose the correct animal and feed it. You may also want to put each animal to sleep in a small box, laying them down, and using the animal sounds.

7. Use puppets with mobile mouths to add variety and interest. As you make the sounds, open and close the puppet mouths. (A booklet containing ideas for mobile-mouth puppets is available from SKI*HI Institute, UMC 10, Utah State University, Logan, UT 84322.)

8. Children begin to enjoy and manipulate flannel board figures around 18 months of age. Make a small one and make or buy some simple animal figures. Staple a small envelope on the back of the flannel board to hold the figures when not in use. Use to encourage gross vocal imitation and discrimination.

9. For an interesting "What's Missing Game," put three animal figures on the flannel board, using the animal sounds as you place them on the board. The first several times, while the child is watching, remove one animal and hide it behind the board or in your shirt pocket. Say "What's missing?" "Where's the cow? Mooooooo!" Then find the cow and put it back on the flannel board. Repeat until you think the child has the idea. When he's not looking (you may be able to cover his eyes gently), hide one animal, then indicate with a shrug of the shoulders "What's missing?" Continue to stimulate with the animal sounds. When it is time to put the figures away, line them up on the board, say bye-bye to each animal, using the animal sound, and indicate that the child is to choose the right one to put away in the envelope.

10. Find a few small animal figures and slip them into a small container like a band-aid box to carry in your purse for emergency play purposes. It may keep the baby busy during waiting times as babies love dumping and filling containers with lids. It may also provide you with gross vocal stimulation opportunities.

11. About 20 months as the baby begins to participate in simple dramatic play, take the toy animals on a trip. Find a small bag or suitcase. While the child watches, pack each toy animal away, using the natural animal sounds. When they are all packed, wave bye-bye and take a short trip down the hall and back. When you return, if the child is still waiting, say "Hi, we're home" and unpack the animals. Involve the child in the play, letting him pack each animal in the bag as you say the animal sound. Encourage imitation and discrimination.

12. If your child has pockets on his clothing, you have an excellent opportunity to stimulate gross vocal discrimination. Slip one of the animal figures or toy vehicles into your own pocket. When the moment is right, sit with the child and say for example, "Where's the dog? Woof, woof!" Look around pat yourself and quickly find the dog in your own pocket. Act surprised. Using the animal sound again, walk the dog into the child's pocket and then leave him alone to either dig it out or leave it be. Slip another animal into your own pocket. Next opportunity, sit with the child for a few minutes, ask "Where's the dog? Woof, woof!" Look in his pocket. Then repeat the process with the new animal in your pocket. The child will catch on to the game after a few repetitions if you make it intriguing. In this way you can provide small moments of stimulation throughout the day.

13. For added motivation, purchase some commercial animal stickers. Most children of this age want to pull them off the paper as soon as you put them on. Make a few of them permanent by sticking them to thin cardboard, then covering them with clear contact paper. This will make them

durable. For an older child who doesn't swallow things, glue small magnets to the back of the covered animal stickers. They are now refrigerator toys to be kept in a convenient place and used at opportune times.

14. Most children are delighted when adults act silly. It is fun to crawl on your hands and knees, imitating animals as you come from behind a door or chair. A third person holding the child in his lap can call for the animals. For example, the adult with the child says, "Here kitty. Meow, meow." Then the adult behind the chair, crawls out acting like a cat saying, "Meow, meow." This is a good activity for involving siblings. Put a sheet over a card table. This will increase the child's interest in the game.

15. For parents who like to sew, draw a farm with grass, lake, and road on a large circle of sturdy white fabric. Fabric crayons or paints will add colorful detail. Sew a drawstring casing around the outside of the circle, thread a long string or shoelace through the casing and draw the circle up into a bag. Inside the bag, put animal figures, small vehicles, and people.

16. Make an animal sound spinner game. Cut a circle from poster board, mark it in quarters, draw or paste pictures of a different animal in each section. Using a brad and an arrow cut from lightweight cardboard, loosely fasten the arrow to the center of the circle to make a spinner. Encourage the child to imitate and discriminate the animal sounds as you play with the spinner.

17. Around 20 months of age, a child may be able to play a simple lotto-type matching game. Prepare two sets of matching 3x5 cards with animals on them. Put one set in a can or box for the child. Lay out the other set. Let the child choose a card from the box; using the animal sounds to stimulate gross vocal discrimination, help the child match his card to one on the table or floor.

18. Using pages photocopied or cut from coloring books, make animal place mats to stimulate gross vocal discrimination. Color the pictures then seal them between layers of clear contact paper. Encourage the child to watch and listen and help as you or an older child sets the table, making the animals sounds as you do so.

TWENTY-FOUR TO THIRTY MONTHS

19. Make some animal puzzles by attaching a colored page from a coloring book with rubber cement to lightweight cardboard. Cut the picture up into a puzzle. Help the child put the puzzle together, using the animal sound to stimulate gross vocal discrimination.

20. Make a tape recording of some animal and vehicle sounds or other common household sounds to match with books or pictures that you have. Listen to the tape and encourage the child to point to the correct picture.

THIRTY TO THIRTY-SIX MONTHS

21. Draw some hopscotch squares with chalk on the driveway or cement basement floor. Inside the squares draw some cartoon animal figures. As you and the child hop from square to square, say the animal sounds.

22. Make some animal puppets from individual-sized cereal boxes. Cut off the ends of two boxes and staple them together to make a mouth. Decorate the boxes with ears, whiskers, horns,

eyes, and noses to resemble animals. Make a funny tongue hanging out of the mouth. Even the most childish of hands can manipulate the mouth with a thumb in one box and fingers in the other. Show the child how to open the puppet's mouth and say the animal sound at the same time.

THIRTY-SIX MONTHS AND OLDER

23. Make a small concentration game with two matching sets of three or four animal or vehicle pictures. Mix up the cards, turn them face down on the floor, turn them over one at a time, saying the animal sounds to match the cards.

24. Find or draw large colorful animal pictures to tape on the wall near the child's bed. Keep a small safe flashlight near his bed. At night as you are saying goodnight to the child, turn off the lights and show him how to shine the flashlight on the animal pictures. Say one of the animal sounds and help him find the right picture with the flashlight.

25. If possible, take pictures of the child with appropriate animals and vehicles for gross vocal stimulation and discrimination. For example, take a picture of the child with a cat, a dog, near a cow, sitting on the car, by a motorcycle, under a clock, or by a boat. Make a special collection of these pictures.

Lesson 18 (Phase IV)

Discrimination And Comprehension Of Words And Phrases
(Skill 9)

EIGHTEEN TO TWENTY-FOUR MONTHS

1. In the experience book, you may speed up discrimination of the names by adding colorful lines below the pictures that duplicate the rhythm or number of syllables in the name. Help the child to follow the lines with his finger to correspond with your voice as you say the names.

2. Have photographs of each member of your family. Protect them by putting them in a special album or covering them with clear contact paper. Bring them out daily and talk about them, identifying each member. Ask questions like "Where's Daddy? See Daddy?" Around 21 months of age most children can relate well to photographs and identify the members of the family. For the discrimination task, select family members whose names are contrasting. For example, Jennifer differs both in rhythm and number of syllables from Jason. Avoid asking the child to discriminate between single syllable names.

3. Stimulate the child to discriminate between the words "up, up, up" and "down."

(a) Blow up a balloon. Say "Up, up, up" or "more" as you pause for breath. Then blow the balloon some more. Encourage the child to imitate your words. If he does, reward him by blowing more air into the balloon. As you let the air out say "down." Use strong prosody in your voice as it carries much information that will help the child in the discrimination task.

(b) Stimulate "up, up, up" and "down" when pouring milk or water into a glass.

(c) When stacking cans or blocks

(d) When threading beads on a string

(e) With any toy whose moveable parts go up and down

(f) When filling the sink or bathtub.

4. Tie a string onto a high place like a door hinge. Punch a hole in the bottom of a paper cup and thread it onto the string. Tie the bottom of the string onto a chair leg. Find a small animal or figure of a person. Putting the figure in the cup, push the cup up the string, saying "up, up, up." When you get to the top say "down" and let the cup go. Encourage the child to imitate and play along.

5. Use the words "more" and "stop" whenever you are filling up or adding to something. Use this with food, water, blocks, or clothes in the washer. Allow the child to help at anything that is appropriate as this will help set the meaning and insure discrimination of the words.

6. Play hide and seek to stimulate discrimination of the following words: "Bye-bye" "all gone" "peek-a-boo;" and family names.

7. Draw a happy face and a sad face on paper or on different sides of a paper plate. Pretend to say somthing angry and show the sad face. Say something happy and show the happy face. You

could use words like "no, no, no" and "good boy," or "stop that!" and "good boy," or "no, no" and "yes." Choose words that have a strong contrast using one of the criteria found on page 457. Use strong prosody in your voice as this will help in the discrimination task.

8. Find pictures that illustrate children doing right and wrong actions. For example, petting the dog and kicking the dog, spilling the juice and pouring the juice.

9. Stimulate for discrimination of the words "sit down" and "stand up" by using the phrases in appropriate situations, in dramatic play, with dolls, and with pictures. Help the child to respond appropriately if he doesn't on his own. Encourage the child to imitate.

10. Stimulate for discrimination of the words "yum yum" and "yuk" or "yucky" by using the words in appropriate real situations, in dramatic play, with dolls, and with pictures.

11. Stimulate for discrimination of male and female voices or high pitched and low pitched voices by having Mom and Dad take turns calling the child, making a game of turning and running to the correct person. At this age a child may point but will not point to a picture merely upon hearing that person's voice. This skill will most likely emerge about 30 months after frequent stimulation. When looking at pictures of Mom and Dad, you can stimulate for discrimination of high and low pitched voices by changing your voice as you name and talk about each picture.

12. Stimulate for discrimination of high pitched and low pitched voices by contrasting big and little items. Assemble different items like a big and little shoe, bowl, plate, or ball. Use a low pitched voice to talk about the large items and a high pitched voice to talk about the small items.

13. Stimulate for discrimination of rhythm by teaching the child two or three finger plays with first lines that have distinctly different rhythms. Play with the finger plays, teaching the movements, and enjoying the fun. After all three have been taught and the child can begin to initiate some of the movements by himself, begin one of the rhymes without using finger movements and see if he will initiate the finger movements by himself, showing that he recognizes the beginning lines and can discriminate between the finger plays.

TWENTY-FOUR TO THIRTY MONTHS

14. Make tape recordings of Mom or Dad saying short phrases with good intonation denoting affection, scolding, or warning. Have appropriate pictures of Mom or Dad in situations showing the use of the corresponding phrases. This is best taught through natural experience, but can be reinforced and used for a discrimination activity. As parent and child listen to the voices, have them point to and repeat the message belonging to the picture. Later, expect the older child to point to the appropriate picture independently. The younger child, the more concrete the pictures must be. Below 18 months, they should be photographs.

15. Stimulate for discrimination of the words "open" and "close" by using the words in real situations whenever possible. Use strong prosody with "open" to provide contrast between the two words. Use for opening a mouth, a closet, book, box, sack, or refrigerator. Encourage imitation and discrimination.

Lesson 19 and Lesson 20 (Phase IV)

Discrimination And Comprehension Of Fine Speech Sounds — Vowels Then Consonants

(Skills 10 and 11)

TWENTY-FOUR TO THIRTY MONTHS

1. Select one-syllable words with different vowels and consonants. Use the words in short simple sentences, emphasizing the selected one-syllable words in natural home activities. For example, to stimulate for discrimination and comprehension of the words "in" and "out":

(a) Use the words while the child helps you put food in and out of the stove, refrigerator, cupboard, or the grocery cart.

(b) Talk about going in and out of rooms, cars, boxes, play tents, or beds.

(c) Play house and talk about dishes, clothing, utensils, going in and out of closets and drawers.

(d) When getting dressed, talk about putting arms and legs in and out.

(e) Talk about getting in and out of the bathtub.

2. Suggested one-syllable words to stimulate for vowel discrimination and comprehension:

sit - stand
yours - mine
car - truck
hand - foot
arm - leg
eat - play
run - hop
dog - cat
come - go
stop - go
fast - slow
hot - cold

There are many possible stimulation combinations. Find those that are natural to the child's home situation.

3. For consonant discrimination and comprehension, select one-syllable words with the same vowel sound but different consonants. Some possible combinations:

walk - talk
clap - tap
sit - hit
lay - play

jump - thump - bump
stop - hop
sing - ring
on - off
moo - shoe - boo
me - tree - bee
bee - key - pea
car - star
throw - go
fish - dish

There are many possible stimulation combinations. Find those that are natural to the child's home and use the words in short phrases and sentences.

THIRTY TO THIRTY-SIX MONTHS

4. For discrimination and comprehension of "come" and "go":

(a) Talk about where you are going, using the words frequently, then say "Let's go!" as you leave the house, as you move away in the car, as you leave the car to enter another place.

(b) Use "come" and "go" in natural situations throughout the day involving the child, and in pretend situations involving dolls and other toys. At first, use some natural gestures to help the child comprehend the words, then phase out the gestures as you enter the discrimination stage.

5. For discrimination and comprehension of "stop" and "go," find something to use as a ramp, like a cookie sheet. Say "go!" then let a toy car go down the ramp and onto the floor. Then say "stop!" and put your hand on the car to stop it. Model this for the child, helping him to respond to the words when he hears them. This can be used for other games such as riding a trike or sliding down a slide.

6. Play follow the leader, selecting two or three one-syllable commands with different vowel and consonant sounds. Jump, stand, sit, go, and hop are a few examples. Find commands that are used in the child's everyday language.

7. Following are suggested words with the same consonant but different vowels for vowel discrimination and comprehension:

say - see
bite - bat - beat - boat - boot
bye - bow
fall - feel
point - paint
stop - step
sack - sock
bug - bag

8. Make a simple lotto game or get a commercial one and select the picture combinations that illustrate the vowels and consonants you have selected. Start with only two or three matching cards until the child plays the game well.

9. As you read books with the child, find simple discrimination tasks on each page. Name the items on the page, encourage the child to point to the correct picture as you name them.

10. Stimulate for discrimination and comprehension of "in" and "out" by arranging several odd sized boxes in a somewhat crooked path across the room. The boxes should be good sizes for the child to step into with the tops removed. Walk the path with the child, showing him how to step in and out of the boxes, using the words "in" and "out" each time.

11. Stimulate for discrimination and comprehension of "fast" and "slow" by walking, clapping, jumping, or swinging your arms in fast and slow tempos, using appropriate words to describe the movements. As he learns to clap fast and slow, have your child clap as you walk to his clapping. If you take a step each time he claps, he will soon catch on that he is controlling your speed. Then start talking about fast and slow.

12. Stimulate for discrimination and comprehension of "run" and "hop" by making a pattern on the floor with a rope such as a figure 8. When you say "run," the child runs around the figure. When you say "hop," the child hops through the two circles of the figure 8.

THIRTY-SIX MONTHS AND OLDER

13. Play a game of "stop and go." This is a good way to involve siblings. One person is IT; the others stand behind a starting line. IT turns his back to the others and says, "Go!" The others start to walk toward IT. When IT says "Stop!" the others must stop moving before IT turns around. If he sees anyone moving, they must go back to the starting line. The first person to touch IT without getting caught wins and becomes the new IT.

14. Find pictures of three or four vowel or consonant discrimination combinations. Make a bingo game with six inch square cards marked in squares with a picture in each and matching individual cards. Mix up the small matching cards, choose them one at a time, call out the name of the picture; the child must then look at his card and find the matching square.

15. Colors can be used for fine speech vowel discrimination tasks. The child should be familiar enough with the colors to be able to name them before having to discriminate them auditorally.

16. If the child is interested in the letters of the alphabet and is beginning to name a few, choose some that can be used for vowel discrimination.

17. Some letters of the alphabet can be used for consonant discrimination:

k - j
b - d - t
m - f - s

Resources

Adcock, D. and Segal, M. (1980). *Play and learn, 2.* La Jolla, CA: Oak Tree Publications, Inc.

Brand, L. and Morse, P. (1981). *Home-style learning.* Englewood Cliffs, N.J.: Prentice-Hall.

Caplan, F. (1971). *The first twelve months of life.* New York: Grosset and Dunlap, Inc.

Caplan, F. and Caplan, T. (1977). *The second twelve months of life.* New York: Grosset and Dunlap, Inc.

Munger, E. and Bowdon, S. (1983). *Childplay.* New York: E. P. Dutton, Inc.

Segal, M. (1983). *Birth to one year.* White Plains, N.Y.: Mailman Family Press.

White, B. L. (1975). *The first three years of life.* Englewood Cliffs, N.J.: Prentice Hall, Inc.

Unit 7

Home Language Stimulation Program

Introduction

The family is ready for the Home Language Stimulation Program when the Home Communication Program has been completed. By this time, the child has developed definite interactive and communication skills and the communication methodology decision has been made.

The SKI*HI Home Language Stimulation Program contains two separate programs: (a) an aural-oral language program and (b) a total communication language program. The Home Aural-Oral Language Stimulation Program will be appropriate for families who have chosen the aural-oral communication methodology. The Home Total Communication Program will meet the needs of families who have chosen the total communication approach.

Both language stimulation programs are based on the same fundamental language assumptions that follow:

1. Language involves the interaction of: (a) *content*—what a child communicates, (b) *form*—how a child communicates, (c) *use*—why a child communicates.

2. Natural parent-child interactions and conversations are the processes for language development.

3. Normal language development should be the basis of the content of the program.

4. Language behaviors are an essential means of assessing language levels and progress.

The SKI*HI philosophy is to assist parents in creating a natural, stimulating home environment that will encourage language growth in their hearing impaired child through a wide range of interactions and conversations.

Both home language stimulation programs contain the same basic skills as shown on the schematic on page 521. However, several concepts and skills unique to total communication use are included in that program but not the aural-oral program.

The Home Language Stimulation Program fits into the SKI*HI Model as follows:

HEARING AID PROGRAM →

AUDITORY PROGRAM →

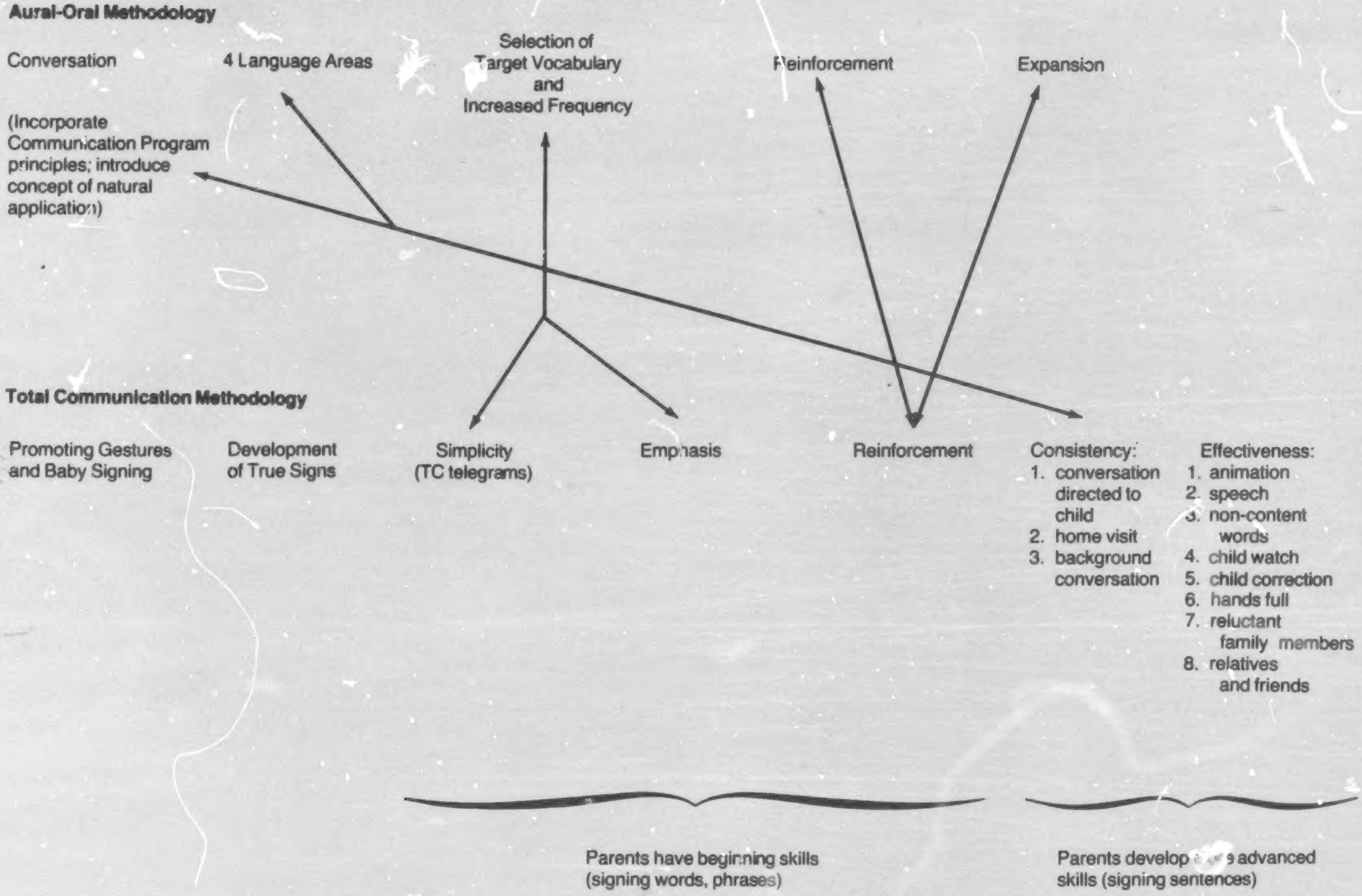
COMMUNICATION PROGRAM →

HOME LANGUAGE STIMULATION PROGRAM: →

(a) Home Total Communication Program
(b) Home Aural-Oral Program

The Aural-Oral Language Stimulation Program follows on page 523. The Total Communication Language Stimulation Program is on page 559.

Language in the SKI*HI Model



Aural-Oral Methodology

Conversation

(Incorporate Communication Program principles; introduce concept of natural application)

4 Language Areas

Selection of Target Vocabulary and Increased Frequency

Reinforcement

Expansion

Total Communication Methodology

Promoting Gestures and Baby Signing

Development of True Signs

Simplicity (TC telegrams)

Emphasis

Reinforcement

Consistency:
1. conversation directed to child
2. home visit
3. background conversation

Effectiveness:
1. animation
2. speech
3. non-content words
4. child watch
5. child correction
6. hands full
7. reluctant family members
8. relatives and friends

Parents have beginning skills (signing words, phrases)

Parents develop more advanced skills (signing sentences)

Home Language Stimulation Program: Aural-Oral

Introduction

Rationale/Goals

The SKI*HI Model has two complete home language programs which are based on the same fundamental language assumptions, philosophy and skills (see pages 519 to 521). The following home language stimulation program is for those families who have chosen the aural-oral approach.

The specific goals of this program are:

1. The parents will incorporate verbal stimulation, modeling, and reinforcement skills into their daily interactions and conversations with the child.

2. The child will respond verbally to this stimulation and increase his ability to communicate thoughts and feelings for a wider range of reasons.

Overview of Home Aural-Oral Language Stimulation Program

Skill lessons:

1. Use Conversation in Four Language Areas.
2. Select Appropriate Target Words and Phrases.
3. Increase Use of Target Words and Phrases.
4. Reinforce Child's Expressive Language.
5. Expand Child's Language Attempts.
6. Maintain Naturalness.

General Teaching Suggestions

The teaching suggestions for the Home Aural-Oral Language Stimulation Program, as in the other programs of the SKI*HI Model, are to be considered a supplement to the basic SKI*HI home visit procedures and teaching suggestions on pages 67 to 69. The parent advisor should be familiar with these basic procedures and teaching skills before proceeding with the following suggestions. These suggestions apply uniquely to the Home Aural-Oral Language Stimulation Program.

1. It is critical to the child's language development that the experiences, activities and situations in which parents use aural-oral language skills are important to the child himself. The child's first words and subsequent language growth will evolve from his communication needs and the knowledge and experiences he wants to talk about. Therefore one of the best language teaching times is when the child communicates a special interest to the parent. Teach the parents

that when their child is interested in communicating about something, this is the most productive time for language learning to take place.

2. Help the parents maintain natural interactions with their child. Alert parents if their concentration on aural-oral language skills adversely affects naturalness with their child.

3. The best language experiences occur naturally and are frequently brief and spontaneous. They evolve from the child's interest, actions, and communications and are a part of the family's daily routine and experiences. Utilize these situations for teaching language skills.

4. Another source of appropriate language situations and activities can be found at the end of the language lessons under *Language Activities and Experiences Supplement* (see page 549). A reading list also accompanies this supplement.

5. Appendices 2, 3, 4 and 5 of the SKI*HI Monograph *Developing Cognition in Young Hearing Impaired Children* offer additional language-rich activities and suggested readings.

6. *The SKI*HI Model Program Adaptation* may be of help in working with families which require a simplified, visually-oriented approach to language programming.

7. The parent advisor should reinforce the use of previously learned communication skills as the parents learn new aural-oral language stimulation skills.

8. The Home Auditory Program lessons are continued throughout the entire Language Stimulation Program being taught either on alternate home visits or in conjunction with the language stimulation skill lessons. The final result should be an integration of communication, auditory, and language skills as the parents interact with their child to encourage listening, speech and language development.

9. Specific teaching strategies for each individual lesson will be found following the lesson discussion.

Lesson 1

Use Conversation In Four Language Areas

Outline/Parent Objectives

I. Parents will explain the importance of four home language stimulation areas.
  A. The four areas are language learning situations which involve natural parent-child interaction.
  B. The four areas help parents become aware of opportunities for new language in all aspects of their child's life.
  C. The four areas help parents apply language skills in a systematic way.

II. Parents will give examples of parent-child interactions in each of the four language areas.
  A. The first area is child care activities.
  B. The second area is parent task activities.
  C. The third area is child initiated activities.
  D. The fourth area is parent directed activities.

III. Parents will demonstrate ability to converse with their child in each of the four language areas.

Child Objectives

1. Child will have frequent and varied opportunities for communication and conversation.
2. Child will derive meaning from a wide range of experiences.

Materials

None

Lesson

Discussion. There are many family and home experiences that are natural language learning situations. These are situations in which the child and his family are naturally interacting and conversing. These situations have been grouped into "Four Language Areas." They are: (a) child care activities, (b) parent task activities, (c) child initiated activities, and (d) parent directed activities.

By grouping activities and experiences into language-rich areas, parents and parent advisor can more easily apply new language skills in a systematic way in all aspects of the child's daily experiences.

Child care activities are those in which the parents must take care of the child; for example, dressing, undressing, feeding, comforting, and bathing. These child care experiences are valuable for language stimulation since they are times when the parent and child are most closely interacting and communicating. These experiences are vital to the child's total development and help establish the parent-child bond and the positive attitudes necessary for communication and language.

Parent task activities are those that mom and dad do every day, such as cooking, washing dishes, making beds, cleaning house and yard, and repairing. The child will often want to participate and usually does, even if parents could accomplish more alone. The parents can make the task a valuable language learning situation during the times the child wants to participate.

Child initiated activities are those initiated by the child because he is motivated and interested. These situations are some of the most important occasions for language learning. Whether the child is playing by himself or sharing his interest with the parent, the parent can converse and make it a linguistically meaningful language experience without interrupting the child's play.

Parent directed activities are games, stories, and semi-structured activities the parents choose for specific purposes. Some language skills can best be developed through more structured games and activities or through "reading" stories and pictures. The parents should learn how to effectively read stories to their hearing impaired child or how to sit down with their child and conduct a language activity such as cutting and pasting, playing with clay or puppets, or matching colors and objects. The parent advisor can occasionally bring materials into the home to demonstrate to the parents.

These four language areas are basically the total of a young child's world. One of the most important jobs of parents is to teach a child the various aspects of the world that are important to him. A child's actions reflect his thoughts and knowledge. As the child tries to verbalize his thoughts it is important for parents to observe, find out what is meaningful for him, and give him language for his actions and for the things that are affecting him. Matching parent words to child thoughts in conversations is a most important way to teach the child language.

The goals, then, of this lesson for the parents are: (a) to become aware of the many language-rich situations within the four language areas and (b) to take advantage of these situations through conversations that respond to the child's actions and interests.

Teaching strategies. The parent advisor should discuss the four language areas and give many examples usable in the home. She should then have the parents select an area and an activity in that area which the parents would like to begin and could practice during that home visit. The parent advisor should demonstrate a conversation in that activity responding to the child's interest and actions. The parent then performs. A challenge is left for the parents to perform that activity throughout the week.

During the ensuing weeks, parents will practice conversing with their child in all four areas. At first, as the parents are learning about the many language opportunities in the four areas, the stimulation will be the conversational turn-taking they have already learned in the Home Communication Program. Parents should remember to: (a) wait for the child to take a turn, (b) avoid the temptation to dominate the activity, and (c) carefully observe what the child is interested in doing and saying and then respond appropriately. Later, parents will apply the new language stimulation skills they learn in all four language areas.

Parents will move on to the next language stimulation skill when they demonstrate the ability to comfortably use conversational turn-taking in all four language areas.

The following specific teaching suggestions may be used with parents.

1. Let the parents help select the activities; they know best their daily routines and their child's interests.

2. Choose the language area and activity for next week's visit *before* the end of the present visit; the parent will then be able to prepare for the next week.

3. Don't always stay in one room or indoors; the objective is to make parents aware of the unending and varied language opportunities in a child's environment.

Review Questions For Parents

1. Give some examples of interactions you and your child have in each of the four language areas.

2. Why do you think specifying language areas is important? (see page 525)

3. Why do you think stimulating a child's language through a variety of experiences is valuable? (see page 526)

Sample Challenges

1. Select an activity in one language area and vary the time of the day it is used and the length of the activity.

2. This week, select and conduct two different activities for one area. Tell me about the activities next week.

Lesson 2

Select Appropriate Target Words and Phrases

Outline/Parent Objectives

I. Parents will understand the importance of selecting and emphasizing target vocabulary and phrases.
   - A. The development of vocabulary is directly related to the meaningful experiences the child has with vocabulary.
   - B. A child's vocabulary development is dependent on the frequency with which he hears words and the meaningfulness of the situations in which the words are used.
   - C. Some words are more important to a child's learning than others.

II. Parents will consider four criteria in selecting target vocabulary.
   - A. Choose words that parents would like their child to understand and express.
   - B. Choose words that family members naturally use.
   - C. Initially choose appropriate nouns, strong verbs, some adjectives, prepositions and adverbs.
   - D. Choose words appropriate to child's current experiences.

III. Parents will demonstrate the ability to select and use target vocabulary.
   - A. They will choose target vocabulary appropriate to their child's age, current experiences, and communication needs.
   - B. They will use target vocabulary in various meaningful situations to give the child maximum exposure to these words.
   - C. They will emphasize target words in natural conversation and interactions in each of the four language areas.

Child Objectives

None

Materials

None

Lesson

Discussion. The development of vocabulary and thus the development of language is directly related to meaningful experiences with the vocabulary. A child does not develop understanding and use words that he has not had meaningful experiences with. Vocabulary development is dependent on: (a) the frequency with which a child hears the words and (b) the meaningfulness of the situations in which the words are used. Meaningful verbal experiences determine when and what vocabulary is learned.

Some words are more important to a child's learning than others, depending upon his age and language level. That is why parents need to learn how to select certain vocabulary words and how to emphasize them in conversation. Parents need to be aware of the words their child needs to improve communication, words he can use to talk about his feelings, his knowledge, and his experience. They need to know how to select vocabulary, phrases and expressions that are appropriate to his age and experience.

Teaching strategies. After the parent has demonstrated the skill of conversational turn-taking during a variety of activities in the four language areas, the parent advisor should discuss how to select appropriate target vocabulary and expressions.

There are four basic criteria in selecting target vocabulary.

1. The target vocabulary should help clarify communication. Ask the parents: (a) what words they would like their child to understand, e.g. "wait" "mine" "yours" "come here" "I'm downstairs" "I'm tired or angry" "put it back" "I'm sorry," and (b) what words the child is currently trying to express with sounds or body language that they would like their child to be able to use; e.g. *desired foods*: cookie, cereal, milk, cracker, pop, apple, banana; *desired objects or people:* Momma, Daddy, blanket, bottle, drink, up, book, trunk; *feelings:* want, love, frustration.

2. Target words should be those used naturally by family members, not just taken from a list; e.g., stove vs. range; icebox vs. fridge; nanna vs. grandma. However, a word list can be helpful as a guide or reminder later on as the child's vocabulary grows.

3. Most of the vocabulary selected in the beginning should be: (a) *nouns* including *locations that matter* (bed, here, out, car, chair), *objects* (toys, food, clothes, bodyparts, household items), *experiences* (falling down, riding in the car, shopping), and *people who affect the child* (mommy, daddy, grandpa, cookie monster); (b) *verbs* or actions the child makes or sees, e.g. push, throw, smile, jump, clap; (c) *adjectives* such as wet, dry, happy, sad, tired, angry, dirty; and (d) *prepositions* and *adverbs* including up, down, on, off, fast, and slow.

4. The vocabulary chosen should be a result of the parent's observation of the child's current experiences and the meanings behind the child's current communication.

The parent advisor should next tell the parents how to use the selected target vocabulary. Target vocabulary should be used in natural, grammatically correct sentences; that is, as correct as family members normally talk. Family members should not change to stilted sentences, but should keep sentences or phrases simple and natural. The target words should be used in as many varied situations as possible to give the child maximum exposure to them. The more meaningful experiences the child has with a target word or expression, the faster he will begin to understand its meaning and use it expressively.

Finally, target phrases or expressions accompanied by actions are important for the child's development of language. The following are examples of expressions that could be used with actions.

Young Child	**Older Child**
"Throw me a kiss"	"Roll the ball"
"Wave bye-bye"	"Close the door"
"So big!"	"Where's your ——————?"
"Where's your nose?"	"Climb in your chair"

After discussing the above concepts with the parent, the parent advisor selects 4-6 target words for one language area that can be demonstrated at that home visit and discusses the appropriateness and reasons for the selection. Then the parent is asked to select 4-6 target words for a different language area and discuss her reasons for selection and their appropriateness.

The parent advisor then models how to emphasize her vocabulary selection in a brief interaction with the child and discusses the interaction with the parent. The parent then chooses another set of vocabulary targets and uses them in a conversation with the child. Together they discuss the parent's use of targets, emphasis, and naturalness, and how she felt about using the target words.

The parent and parent advisor then list natural situations in which these same target words can be emphasized. The parent is then challenged to use the target words in (a) the original home visit conversation, (b) any other situations during the child's day that will increase his exposure to the words.

At subsequent home visits, review the material on choosing target words and expressions. Discuss the challenges and which words the child appeared to attend to and those he did not which require further practice. Decide together whether to use the same words for a current week's challenge or to keep a couple of words from the last week and then select one or two new ones. Then together: (a) choose another language area and conversation opportunity, (b) select appropriate target vocabulary to be used, (c) practice the activity during the home visit, and (d) think and plan how the same words or expressions can be emphasized throughout the child's day in other language areas.

Challenge the parents to emphasize the target words in: (a) the practiced activity from the new language area, and (b) situations in the other language areas.

The parent advisor should repeat the above procedure until the parent has chosen target vocabulary in each of the four language areas. At that time, the parent will be using between 16-24 target words in all four areas. The parent should continue selecting and emphasizing new target words, rotating the four areas, according to their child's receptive and expressive language progress.

Record target words as they are selected for each language area. The chart on page 533 will be helpful in recording the child's target vocabulary. More copies can be made so a continuous record of the child's progress can be kept. Each category indicates a different step in language growth. The *Receptive* category indicates that the child understands a word, but does not yet use it expressively; for example, a child looks toward his blanket when the target word *blanket* is spoken. The *Expressive/Imitation* category indicates that the child shows awareness of the word by attempting to imitate it, but does not use it spontaneously. The *Expressive/Spontaneous* category indicates that the child uses a word spontaneously and meaningfully for communication. The child's behavior may not necessarily appear in the order on the chart; for example, receptive and expressive/imitation behaviors may occur in reverse order.

Review Questions For Parents

1. Why do you think target words and phrases are important for a hearing impaired child? (see pages 529–530)

2. What are some of the concepts necessary in selecting appropriate vocabulary? (see page 530) Give some examples.

Sample Challenges

1. Place pictures of your target words on the refrigerator at your child's eye level.
2. Place a list of your target words in a very visible spot or pin it on your child as a reminder.
3. Draw a page in your child's experience book for a particular activity and then write the target words by the drawing.
4. Re-read the experience page as a parent directed activity.

RECORD OF TARGET VOCABULARY

	DATE	TARGET WORDS AND PHRASES	RECEPTIVE	EXPRESSIVE Imitation	EXPRESSIVE Spontaneous	COMMENTS
CHILD CARE		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
		7.				
PARENT TASK		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
		7.				
CHILD INITIATED		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
		7.				
PARENT DIRECTED		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
		7.				

Instructions: Record target words and date as they are selected for use.

Place a (✓) in the appropriate box if the child's behavior indicates:

1. *Receptive:* understanding of the target vocabulary in two or more instances
2. *Expressive Imitation:* an approximate imitation of the target vocabulary
3. *Expressive Spontaneous:* spontaneous use of the word to communicate

Lesson 3

Increase Use Of Target Words And Phrases

Outline/Parent Objectives

I. Parents will understand that increasing the use of target vocabulary is important.
    A. Hearing impaired children do not hear words as often as hearing children because of competing environmental sounds, varying loudness levels of the speaker's voice, fluctuating distances from the speaker, and the child's type and degree of hearing loss.
    B. Hearing impaired children need to hear words as often as hearing children to develop language.
    C. The less frequently a hearing impaired child hears important vocabulary the more language delayed he will be.
    D. The words a child hears most often are the words he develops first.
II. Parents will demonstrate the ability to increase their use of selected target vocabulary in interactions with their child without dominating the conversation.

Child Objective

1. Child will derive meaning from words more quickly due to his parents' increased use of target words.

Materials

None

Lesson

Discussion. The hearing impaired child must hear vocabulary as often as children with normal hearing in order to develop receptive and expressive vocabulary. Competing environmental sounds, differing loudness levels of the speaker's voice, fluctuating distances from the speaker, and the child's type and degree of hearing loss all act to prevent the hearing impaired child from hearing speech as often as hearing children. The words a child hears most are the words he develops first. The more infrequently he hears the words, the later in life he will develop the vocabulary. If a child has no meaningful experiences with a word, he will never develop meaning for that word.

Typically, the hearing impaired child hears words less often than the hearing child and thus is delayed in his language development. However, if he hears a word often enough, he will eventually develop it even though he may be a few months to several years delayed.

If the hearing impaired child is only occasionally hearing a word, for example one out of four times it is spoken, the parents need to greatly increase their verbal output, in this case by 400%, so that the hearing impaired child will hear it as often as the hearing child.

One of the most important tasks of the home language stimulation program is to increase the frequency of input of vocabulary (language) in the home so that the hearing impaired child gets as many meaningful experiences as the hearing child.

Teaching strategies.

1. During one home visit, discuss increased use of target words with the parents using the above information.

2. Parent and parent advisor then select five target words for one language area.

3. Parent advisor demonstrates to the parents how the frequency of target word use can be increased in a conversation by using the following steps: (a) Use a normal or below normal frequency usage of the target vocabulary. Have the parent record on paper the number of times the parent advisor uses the vocabulary in a 2-3 minute interaction. (b) Then, have the parent conduct the same activity using target words at a comfortable, normal rate. Parent advisor records the number of times the target words are used. This is to establish the parent's normal rate of usage. (c) Then, the parent advisor conducts an activity increasing the rate of frequency 200-400%. If the child is bored with the activity, change to something different, even selecting new target words, if necessary. The parent again records each time a target word is used. After discussing the differences of target word use in the above activities, set a goal for the parent to increase the use of target words, remembering to keep the conversation natural. Work on increasing frequency in other language areas with 4-5 new target words over several weeks until parents arrive at their optimal level of use. Some parents just talk more than others, so the frequency rate will vary from person to person. Remember, don't let increased frequency result in the parent dominating the interaction. Increased vocabulary frequency should take place within conversational turn-taking.

Review Questions For Parents

1. Why is it important for a hearing impaired child to be exposed to important words more frequently than a hearing child? (see pages 535–536

2. What are some of the reasons why a hearing impaired child may not hear words as often as a normally hearing child? (see page 535)

3. What are the words the child develops first? (see page 535)

Sample Challenges

1. Set specific goals as to how many times you want to use a target word in a two minute conversation (for example, ten times in two minutes).

2. Record your conversations with your child to assess how frequently you use target words.

3. Chart your spouse; have your spouse chart you. Do the same with older siblings, grandparents.

4. Discuss with your spouse the difficulties encountered with increased use of target words and some solutions.

5. Tape record some of your conversations to determine if naturalness is maintained or if the conversations are becoming stilted.

450

Lesson 4

Reinforce Child's Expressive Language

Outline/Parent Objectives

- I. Parents will understand three basic principles of reinforcement.
  - A. A child's language attempts will increase if these attempts are followed by positive results.
  - B. *Before events* happen prior to the child's language attempt and encourage the child's future use of words.
  - C. *After events* happen after the language attempt and control how frequently the attempts occur in the future.
- II. Parents will demonstrate how to reinforce language attempts effectively.
  - A. They will *respond positively and warmly*.
  - B. They will *respond frequently*.
  - C. They will *respond promptly*.
- III. Parents will know and use a variety of reinforcing responses.
  - A. Conversational turn-taking is a natural reinforcing after event.
  - B. Expansions are after events that repeat the child's language attempts and expand them into more mature forms.
  - C. Positive sentences and phrases reinforce and encourage more communication
  - D. Facial expressions, gestures, nearness, and physical contact are all effective reinforcers.

Child Objective

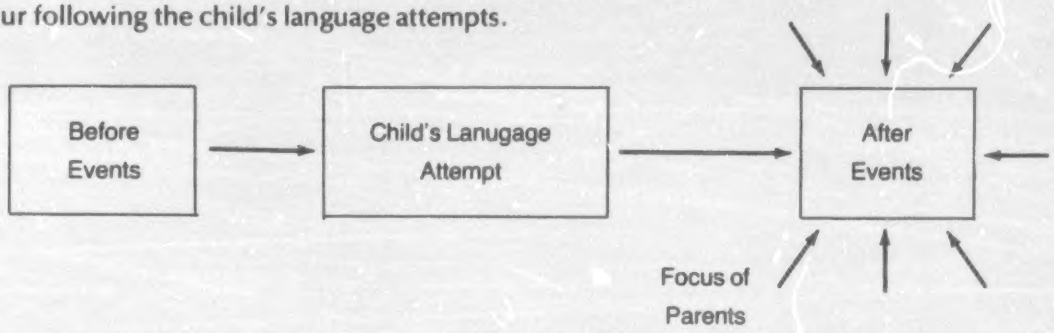
1. Child will respond to reinforcement by attempting to use expressive language more frequently.

Materials

None

Lesson

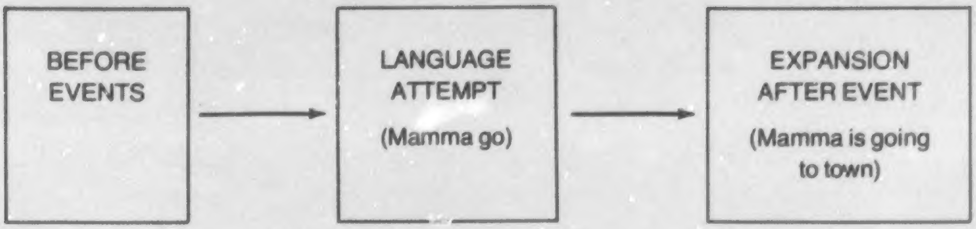
Discussion. Language acquisition is a complex problem which includes many factors. One of the important factors is the frequency of language behaviors which the child attempts. The home situation should maximize the number of these language attempts so that the child finds success and positive results from his attempts at language behavior. There are some very easy and practical ways for parents and others in the home to insure that the child will gain these positive outcomes from his language attempts. The general principle is that the child's language attempts will increase if those attempts are followed by frequent, immediate and positive results in the home. This presentation will attempt to give some guidelines to parents on how to facilitate such language attempts by using *after events*. Maximizing these after events will increase the frequency of the child's language attempts and will maintain the child's motivation to continue attempting language. Hence, the focus of those in the home should be in assuring that positive after events occur following the child's language attempts.



Positive after events. Positive after events may be given in many different ways. As was discussed in the Communication Program, research indicates that the total impact of communication is made up of 7% verbal, i.e., *the words said;* 38% vocal, i.e., intonation or *the way words are said;* and 55% facial-visual, i.e., the expressions and gestures used or *how the words are said.* If this is true, then which words are used is not nearly as important as the tone of voice used and the facial-gestural enthusiasm in responding to children's language attempts. Simple attention from a parent in the form of looks, smiles, assorted vocal sounds and verbal praise is a powerful after event to a child which gives him a feeling of achievement and success in his language attempt.

Conversational turn-taking is a primary reinforcing after event. The principles of *frequency* and *immediate response* are naturally built into conversation. Thus, if the parents are positive and accepting, conversational turn-taking includes all the reinforcement principles discussed in this lesson.

Other types of after events are also important to the task of assisting language growth in the child. One of these types is what is called "expansions." Expansions are very useful and functional for use in the home environment as after events which can also result in auditory stimulation to the child. Expansions are after events which repeat the child's language attempts or expand them into grammatically correct language units. An example would be: a child says, "Daddy go" and immediately Mommy says, "Daddy is going to work," an expanded version of the child's initial utterance. Expansions are functional because they not only communicate attention, but also, if used properly with enthusiasm and excitement, they communicate positive acceptance and, hence, increase the probability of the child making another language attempt. *Expansions are one of the best after events which can be used to accelerate and increase language in children.* If used properly, they fit into the structure as follows:



Other types of effective after events include words of praise, facial expressions, nearness, and physical contacts of various sorts. Below is a short listing of potential after events which can be used to increase children's language attempts. It will be apparent that the type of after event used will depend on the age of the child, his current level of language, and what the parent or person delivering the after event is doing.

Positive sentences and phrases that reinforce and encourage language:

Can I see?
Want some?
You did that?
Show daddy!
Mine?
Thank you.
For me?
Super!
Wow!
Let grandma see.
Is that yours?
Good boy!
Aren't you smart!
You like that!
Want mamma?
Come here?
Me too?

Facial expressions and gestures

smiling
winking
nodding up and down
looking interested
laughing
clapping

Nearness and physical contact

touching
hugging
sitting in lap
patting head, shoulder, back
stroking arm
shaking hand
holding hand
moving close and listening

Effective use of after events does not require a great deal of time or preparation from the parent. Most of the after events suggested above may be given without interrupting the normal flow of work or home tasks which are going on. The important principle to remember is *immediate responsiveness* to the child's language attempts and to place most emphasis on the vocal characteristics (the way words are said) and the visual-facial characteristics (how the words are said) rather than worrying about exactly what is said. Only in the use of expansions does one need to think about what to say, and then only to generate the longer form of the message which the child was attempting to communicate. Immediate response to the child's language attempts will provide the child with motivation to keep trying and to continue making and modifying his language attempts. The continual use of good after events can be a valuable tool in the complex process of language training.

Teaching strategies.

1. Discuss the preceding information with the parents using the *Review Questions For Parents* and the *Outline/Parent Objectives.* Explain that expansions will be covered in more detail in the following lesson.

The child should now have fairly well established non-verbal communication skills and should be attempting to initiate some verbal language. The emphasis now is to apply reinforcement principles to more and more of the child's verbal language attempts and lessen responses to the child's non-verbal communication in order to encourage more mature language from the child. To lessen non-verbal responses, a parent may have to play dumb to whines or gestures, or ignore them, or model the more appropriate verbal language. However, parents should not demand verbal imitation or correct speech production from the child since that may discourage the child from trying to verbalize.

2. The parent advisor models the skills of being positive, frequent and immediate in response to the child's language attempts in play or informal situations, concentrating on the child's verbal language attempts when possible.

3. Let the parent then interact with the child, responding to his language attempts with reinforcing after events. Select an appropriate challenge for the following week using any or all of the points discussed.

4. Some parents may need help in learning how to be good users of after events. The key is to think about all the situations in which the child and the parent are together and figure out how to apply after events in those situations. Initially try a specific number of times (5) in each situation and then gradually expand. Parents will find the more they practice the more natural it becomes. One way to help parents remember to be responsive is to have them put reminders in various strategic locations throughout the home where they are frequently together with their child. Put up signs or other items in key places: notes stuck on the refrigerator, the kitchen cabinets, the back of the bathroom door, or the mirror can serve as reminders of what to do. Compose some specific signs to put up. Below are some examples.

Respond
immediately
to Susie

Tell Billy
how well he
is talking

Sound
enthusiastic

Wait for Billy to
respond back

Praise
Billy for
his efforts

Are you
listening
for Billy?

5. Parent and parent advisor list some typical language attempts of the child and write some possible responses that reinforce and encourage more communication. Select a few language attempts to respond to during the coming week.

6. Remember, responding to the child by using a question and an expectant wait for a turn is very reinforcing. Conversational turn-taking is natural, powerful reinforcement.

7. For parents who are effectively reinforcing their child's language attempts, this lesson may be used as a review of reinforcement principles.

Review Questions For Parents

1. What does reinforcement mean to you? How are you reinforced? How is your child reinforced?
2. Describe some *before events*.
3. Relate some *after events* that have been reinforcing to your child.
4. Why is it important to be: (1) positive, (2) frequent, (3) immediate? (see page 538)
5. Describe some verbal language attempts your child now uses in place of his previous non-verbal communication. Does he ever revert back to this non-verbal communication? How could you encourage the more mature verbal communication?

Sample Challenges

1. During interactions this week, observe specifically your positiveness, frequency and promptness to your child's language attempts.
2. Observe and record your child's verbal language attempts and non-verbal communication. Concentrate on responding to and encouraging his verbal language attempts.

Lesson 5

Expand Child's Language Attempts

Outline/Parent Objectives

I. Parents will explain that it is important to expand their child's language attempts.
   A. "Expansion" reinforces the child's communication and encourages him to communicate.
   B. Expansion provides parents with an opportunity to model correct speech and sentence structure.

II. Parents will demonstrate their ability to expand their child's language.
   A. They will imitate the child's communication.
   B. They will provide the child with a more mature level of communication.

Child Objectives

1. Child will be reinforced for his language attempts and encouraged to communicate more often.
2. Child will learn a more mature level of communication through parent modeling.

Materials

None

Lesson

Discussion. It is frequently very difficult for parents and especially for strangers to figure out what the hearing impaired child is trying to communicate. Often the child himself is as frustrated in his communication attempts as the listener is. Consequently, it is very important to consistently encourage the child to more mature levels of communication. Expansion of a child's language attempts can help the child learn to communicate in more mature ways.

Expansion is imitating the child's communication and then expanding it with a more mature utterance. As discussed in the Communication Program, a child learns best from parent communication at his comprehension level but slightly more mature than his expressive level. For example, a child who points to a cookie with no sound (gestural communication level) can be responded to by a point and the word "cookie." A child who says "uh" for cookie (vocal communication level) can be responded to by "uh, cookie" and then handed the cookie. A child who says "cu-cu" (verbal communication level) can be responded to by "cookie, want a cookie?" As previously mentioned, the parent's use of expansion is one of the strongest reinforcers of the child's language attempts. Parents need to work specifically on this important language principle.

In using expansion, parents should remember to do the following: (a) imitate the child's utterance, occasionally including gestures, (b) expand to a more mature level that still keeps the child in the conversation, and (c) WAIT for the child's response.

It is important for parents to be aware of the child's level of communication and adjust to it. Often, as a child moves to a more mature language level (such as single words or two word combinations), he will still be using gestures, babbling and jargon. The example below illustrates the many opportunities within a conversation to imitate and expand a child's utterances.

C: "Ba-ba."
P: "Ba-ba, pretty baby."
C: "Pe ba-ba."
P: "Pretty baby, yes."
P: "That's *my* baby."
C: Shakes head, "No, Crisi baby."
P: "Christie's baby."
C: "Seep nite-nite."
P: Puts doll in bed
C: "Seepi, seepi."
P: "Baby sleepy?"
C: "Seep baby, nite-nite"

This example shows how imitation and expansion reinforce the child's utterances and encourage him to continue the conversation. It also provides the parent the opportunity to model correct speech and sentence structure.

Note: Imitation is phased out as the child reaches more mature verbal levels and when it interferes with clear communication.

The language principle of expansion teaches parents to expand the child's language utterances into complete sentences or from complete sentences to more complex patterns.

Examples of expansion from one, two or three word utterance to simple sentence are:

EXAMPLES OF EXPANSION

Child's utterance:	**Parent's response:**
1. Child attempts to say a word *ba* (for ball).	Parent repeats word and puts it back into a simple sentence. "Ball, want your ball?" or "Where's the ball?"
2. Child uses telegraphic speech.	Parent repeats thought in a complete, simple sentence.
(a) Ball up	(a) Throw your ball up
(b) Dadda bye-bye	(b) Daddy's gone bye-bye?
(c) See doggie	(c) You see the doggie?

3. Child uses limited vocabulary.	Parent adds new vocabulary words.
(a) ow (cow)	(a) The cow says "moo!"
(b) want water	(b) Want some *cold* water?
(c) come mama	(c) *Hurry,* Mamma? Come, *fast?*
4. Child uses few sentence forms, (perhaps only simple, present tense sentences).	Parent expands child's sentencing into varied sentence forms.
(a) 1. Go party. 2. Go to store.	(a) Varying tenses 1. Tomorrow you're going to the birthday party. 2. We went to the store this morning.
(b) I eat cereal.	(b) Compound or complex sentences You are sitting down and eating your cereal.
(c) 1. Put boat in. 2. I get down. 3. Doggie hurt. Bandage.	(c) New phrases and clauses 1. Put your boat *in the closet.* (prepositional phrase) 2. *When you're finished eating,* get down. (adverbial clause) 3. Your doggie *that's hurt* needs a bandage. (adjective clause)
5. Child uses incorrect language or speech.	Parent expands child's utterances into correct sentences.
(a) All gone shoe.	(a) Your shoe is all gone. Where is it?
(b) Me find shoe.	(b) Oh, you found your shoe.
(c) I putted on shoe.	(c) You put on your shoe.
6. Child expresses simple ideas.	Parent expands by adding new information.
(a) Mamma, Miss Foyer sick. No school. Miss Foyer home. Cough, cough. Miss Foyer sick.	(a) Oh, your teacher is sick. Miss Foyer is home in bed. She feels bad. She coughs. You had a different teacher at school today. I'm sure she was a nice teacher.

It is important that the parents do *not* require the child to say back the expanded expression. They should reinforce the child's language attempt, model a more mature form, and encourage the child to continue the conversation. If the child does repeat the expansion, of course he should be warmly reinforced.

Teaching strategies.

1. Have a special home visit session on expansion of the child's language. Explain the above material to the parents. Together observe or select samples of the child's communication and write out examples of expansion for each communication.

2. Demonstrate to the parents how to use expansion when working with the child in an activity or in a spontaneous conversation.

3. Have parents expand the child's language utterances where possible in a conversation or activity.

4. Whenever there is an opportunity for expansion during the home visit that the parent does not take advantage of, call attention to it.

5. Reinforce the parent for expanding the child's language.

6. Continue using the four language areas and activities for expansion challenges.

7. The parent advisor can assist parents in determining the child's current communication level by listing the child's typical expressions, i.e. gestural, vocal, jargon, single word, combined single word and jargon, two-word, 3 words and more. Then assist parents in selecting expansions appropriate for these expressions.

8. Assist parents in observing non-verbal communication intents and choosing a single word the child could use instead. Make a list of these words to use as target words.

9. Write out a hypothetical script of expansions that might also encourage the child to respond back and continue the conversation.

Review Questions For Parents

1. What is expansion? (see page 543)
2. What are the benefits of expansion? (see page 543)
3. Give examples of how you would expand your child's language.
4. Should a child be required to repeat the expansion? Why? (see top of page 546)

Sample Challenges

1. Practice expanding your child's language during 2 or 3 daily activities or routines.
2. Practice expansion during a specific time period.
3. Record single words that could be used in place of your child's non-verbal messages. Keep a vocabulary list of those words. Use them frequently in your conversations with him as target words.

Lesson 6

Maintain Naturalness

Outline/Parent Objectives

I. Parents will use natural language including speech, gestures, and intonation, as they interact with their child.

Child Objectives

1. Child will learn natural speech and language as modeled by his parents.

2. Child will not be confused by unnatural speech or language habits of his parents as they interact.

Materials

None

Lesson

Discussion. Naturalness is freedom from artificiality or constraint. True language cannot be taught by rote. It must have real, natural meanings and reasons for using it. Parents need to talk with their hearing impaired child just as naturally as they talk to their hearing children. If language is going to be developed by the hearing impaired child, he must sense that his parents feel comfortable with him and that he is a part of the family. Because of the child's hearing problem, some parents may tend to treat the child differently or unnaturally: they may speak too loudly, exaggerate mouth and lip movements and gestures, and use stilted, unnatural sentences or sing-song intonation. Unnaturalness is frequently the result of stress or tension, or taking the job of teaching language too seriously. Parents need to remember to relax and enjoy their child and his unique qualities; his hearing loss is only one part of his total personality and abilities.

Teaching strategies.

1. Discuss this lesson only if it is necessary or appropriate. It can be mentioned briefly as reinforcement for doing what comes naturally.

2. Usually, stressing naturalness and calling the parents' attention to their specific unnatural tendencies whenever they occur is all that is necessary.

3. Be aware of unnaturalness while working with target words, increased frequency, and modeling speech (especially modeling speech intonation).

4. Have the parents tape record themselves as they converse with their child to make them aware of their naturalness or lack of it.

5. The parent advisor may want to refer to Communication Program Skill Lesson 11—*Respond to Child's Cry* for supplemental information.

Review Questions For Parents

1. What do *you* think is meant by being natural as you talk with your child?
2. Give examples of how language can be taught unnaturally.
3. Have you sensed stress or tension as you have helped your child learn language? Why? Did it make you speak or act unnaturally?

Sample Challenges

1. Tape record several conversations with your child. Observe and evaluate your naturalness in language, speech, or tone of voice.
2. Observe and record the instances in which you feel you may have developed unnatural tendencies in interaction. Discuss solutions at our next home visit.

Language Activities and Experiences Supplement

The most effective time for language learning is when the child is paying attention. The two primary instances when the child is paying attention are: (a) when the child communicates to someone, and (b) when the child shows interest in something, someone, or some action. A parent's consistent response to these two indications of a child's attention is critical to the child's language development. However, these two situations are very general and it is valuable to have more specific examples and suggestions that reflect what interests a child and at what times he may be interested in communicating.

The following is a list of family and home oriented situations and activities that can be helpful in planning home visits and challenges for language stimulation. They are organized into two categories for convenience of selection: (a) parent-child experiences in the four language areas, (b) parent-child experiences according to four developmental age groups: birth to 8 months, 8 to 14 months, 14 to 24 months, and 24 to 36 months or older.

The activity descriptions are brief in order to keep experiences natural, spontaneous and unique to the style of the parent and parent advisor and to avoid "teaching" language. It is hopeful these lists will trigger new ideas, innovations, and adaptations for the individual parent and child.

These activities are to be used with these language stimulation principles in mind:

1. All interaction should be joyful and free of tension or pressure. They are not language "lessons". If it is not enjoyable, don't do it.
2. Allow the child to play freely, to discover by himself and to experiment at his own pace. Be there to encourage, to praise, and to participate, not dominate.
3. Help him learn the language associated with his experience by (a) describing his actions, the objects or experiences in words he can understand, (b) model for him where needed and then let him imitate, (c) converse with him in simple sentences and phrases, and (d) implement all communication and language skills possible.
4. If the child is not paying attention, he problably is interested in something else. Observe what that is and give him the language for that activity. Come back to the original activity at another time.
5. Take his lead; he will let you know when things are interesting.
6. Quit when the child becomes bored; a minute or two of enjoyable conversation is better than 20 minutes of frustration.

ACTIVITIES IN THE FOUR LANGUAGE AREAS

Child care

dressing/undressing
bathing
diapering
caring for hurts and illnesses
washing face and hands
bedtime
feeding time
getting up
nurturing/comforting
putting in car seat
birthdays
trips to church, school,
    doctor, dentist,
    grandparents, friends, sitters
going outside
mealtime
giving drinks and snacks
calming fears, anger

Parent task

washing/drying dishes
setting/clearing table
mopping floor
vacuuming
picking up clutter
loading/unloading dryer
putting away/ironing
mending/sewing
watering lawn
making beds
cooking
loading/unloading dishwasher
washing table
dusting/polishing
sweeping
sorting/washing clothes
folding clothes
washing/waxing car
mowing lawn
gardening/weeding
picking up toys
food preparation

Child initiated

all communications to parent
child's actions; (what he is
    looking at, hearing, tasting
    feeling, touching, playing
    with, or otherwise interested in)
accidental spills, breaks,
    falls and hurts

Parent directed

looking at books, pictures, catalogs and magazines
experience pictures and drawings (experience book)
developmental activities
auditory activities
activities for specific purpose: matching, sorting, gross and
    fine motor stimulation
creative play
looking at family photos
cutting, pasting and coloring

BIRTH TO EIGHT MONTHS

Rattle Games

1. While the baby lies on a flat place, shake and move a rattle in a slow circle above his head so he can watch it with his eyes.

2. Move the rattle in a curve toward either side of his head so he uses his eyes and head as he watches.

3. Shake the rattle in and out of the child's line of vision while talking to him. Encourage him to reach for the rattle and play with it.

4. When the baby is on his stomach, face him and dangle the rattle in front of him. Slowly lift the rattle to encourage him to lift himself up. Talk encouragingly and smile.

Cradle Gym

1. String a cradle gym across the crib or play pen for the baby to bat with his hands or kick with his feet.

Mirror Play

1. Provide an unbreakable mirror about 4 to 5 inches in diameter about 6 to 7 inches away from the infant's face so he can watch this 'other friend.'

2. Sit before a mirror with the child and talk about yourselves, a favorite toy in the mirror, or make faces and gestures.

Explore

1. Place the baby in an infant seat close by as you work so he can see the world about him from a sitting position and so you can communicate with him easily and frequently.

2. Place the baby on the floor. Place a toy on a small blanket just out of his reach. Help him use the blanket to get the toy (i.e. getting something by using something else).

3. Tie a light toy on the end of a shoe string. Sit at the table and pull the string to get the toy. Use another string without a toy and describe the results.

4. Make a stretch toy from a painted spool and soft elastic and encourage the infant to reach and pull.

5. Handle and explore different objects as you describe and label what the child is doing and feeling.

6. Select objects that share the same characteristics, e.g., hard, soft, fuzzy, wet, and talk about the common characteristic.

Hide 'n Seek

1. Partially hide a toy under a blanket. "Find" the toy and hide it again. Play as long as the child's interest lasts. Completely hide yourself when child gets the idea. Let him play alone, too.

2. Hide a toy in an easy-to-open box or container that he can play with alone.

Stack and Nesting Toys

1. Allow the child to explore and play freely with nesting or stacking toys. Occasionally show some interesting things that can be done with stacking or nesting.

Senses

1. Moving: move to music with the baby, gently and rhythmically.
2. Smelling: smell food, flowers, spices, unpleasant smells, lotion, soap.
3. Tasting: taste food or objects that are sweet, sour, salty, unpleasant.
4. Hearing: listen to household sounds, outside sounds, fingerplays, lullabys.
5. Seeing: describe what the child sees.
6. Touching: touch soft, fuzzy, wet, hard, cold, hot, objects.

Books and Pictures

1. Practice turning pages.
2. Look at large pictures of animals, people, familiar objects.
3. Look at magazines and catalogs (use dispensable items in case they get torn).
4. Chase the baby as he is crawling (this encourages his pleasurable communication).
5. Play "horsie" on one foot as your knees are crossed.
6. Put the child's crib by the window and talk about what he sees.

EIGHT TO FOURTEEN MONTHS

Hide 'n Seek

1. Play peek-a-boo; hide your face in your hands.
2. Hide your whole body; take turns.
3. Wrap a toy in a bag or piece of paper.
4. Hide a toy so that the child has to open two things to get it. Show him the toy as you put it in and assist him in finding it. Then put the toy in again and allow the child to find it alone.
5. Use a container with an easy-to-remove lid with a wide slot. Drop in chips, buttons, coins. Dump them out and replace the lid. Drop in the objects again.

Block Play

1. Show the child how to stack two or three medium size blocks (2"x2" or 2"x4").
2. Show the child how to push two or three blocks along the floor in a line.
3. Let the child play creatively alone.

Grocery Shopping

1. Put the child in a cart and let him help put things in it. Describe the items. Let him touch and hold them. Let him feel like a helper.
2. Let the child see what you do with the foods you both bought (cut, peel, wash, store). Show him what is in the boxes.
3. Let the child help unload groceries (sort cans, boxes, vegetables, refrigerator items).
4. Take along can and/or box labels and let the child match them to the labels in the store.

Books, Pictures and Magazines

1. Point out pictures that are alike and different.
2. Identify in pictures: (a) people and objects relating to the real things, (b) what people and animals are doing, (c) the colors of objects, (d) the number of objects and people, (e) the position of things (on top, under, behind), (f) the feelings of people (happy, sad, laughing), and (g) the sizes and shapes of objects (large, small).

Sandbox Play

1. Feel the sand, pour it, add water to it; fill pails and cans, dump them.
2. Build a sand house; make a hole or a pie.

Water Play

1. Let the child play with different sizes of containers, sponges and bath toys.
2. Blow bubbles.
3. Wash plastic dishes/glasses.
4. Wash dolls or let the child wash himself with a small cloth and soap.

Sorting

1. Have four each of two or more different things, such as blocks, cans, and socks; sort them into piles.
2. Sort laundry items (daddy's pile, socks, towels, underwear).

Miscellaneous

1. Play give and take with the child. Let him hand you items one by one; you return them one by one. Describe the action as you play.

2. Begin a play activity with words and action to help the child know what you mean. Say "Come, let's march," and then start marching.

3. Let daddy play piggy-back with the child on his shoulders or back.

FOURTEEN MONTHS TO TWO YEARS

Shell Game

1. Use three cans of different sizes. Let the child see you hide a toy under one can and then shuffle the cans around. The child then guesses which can is hiding the toy.
2. Hide your eyes and look for a toy.
3. Hide a small toy in one hand; then switch hands.

Body Parts

1. Point to body parts; move them on the child or yourself.

Words Learned Through Actions

1. Make a doll or favorite stuffed toy do different things like walking, lying down, sitting or standing.
2. Use other toys or objects in different ways (push or pull them, carry them from place to place).
3. Imitate common sounds (dog, cat, plane, truck).
4. Play with puzzles; take some cardboard and cut out shapes; vary the shapes and the color of the cardboard; help the child match the pieces.

Block Play

1. Use six or eight blocks of two obviously different sizes (big and little). Let the child play with them. Ask for *big* blocks and *little* blocks and use them to make something.
2. Pile the blocks together. Ask the child for two blocks of specified sizes. Ask if they are the same. If the child answers *yes* and they are not, put them together and compare the sizes.

Make Believe

1. Have telephone conversations with the child.
2. Place two chairs together. Let one be the driver's chair and the other the passenger's chair. Let the child be the driver.
3. Play house; provide a place for imaginative house play.
4. Have a tea party with dolls or animals.
5. Use common objects in new and different ways.

Be a Helper

1. Do chores that involve the child. Let him be a helper or imitate you.

Putting Toys Away

1. Use open toy shelves if possible to store toys. They are convenient for categorizing toys and deciding where each toy *belongs*.
2. Put toys away in categories. Say such things as: "Put away the trucks." "In goes your ball." "Find all the blocks."
3. Provide a basket for toys with handles so it can be carried.

Out-of-Doors

1. Use the language associated with grass ("It tickles," "It's damp"), rocks (smooth, hard, rough), snow (cold, wet, deep), rain (wet, "It's raining!"), tree bark (rough, bumpy), mud (slippery, dirty) and sunshine (warm, bright, shadows).
2. Take advantage of the open space and new surroundings for outdoor games and activities.

Guessing Games

1. Hide a ball or a shoe. Say "Where's your shoe?" "Where is it?" Take the child by the hand and let him look for the objects (behind chairs, sofas, under tables). Encourage him by saying "No, it's not here." When he locates it, say "Yes, here is the shoe!" Ask him to hide it and you look for it.

Hide in a Box

1. To encourage closeness and auditory-kinesthetic awareness, put a large box over you and your child and talk, letting him feel your vibrations. The confined quarters make a fun situation for the child while making acoustic-kinesthetic feedback possible. *DO NOT* frighten him; make the game fun and exciting.

TWO TO THREE YEARS OLD OR OLDER

Nesting Boxes

1. Nest boxes emphasizing the concepts of all gone, big, bigger, biggest, and small, smaller, smallest.

2. Arrange boxes in a row to develop the concept of orderly size.

Sorting Activities

1. Have the child sort two types of objects by name, color and subject into two different boxes; dump objects out and start again; increase the number of boxes and objects.

2. Have the child sort objects by their function such as combs and brushes vs. forks and spoons.

3. When sorting laundry, have the child match identical objects such as socks.

4. Trace outlines of hands, popsicle sticks, buttons, leaves or scissors and then have the child match them with the real objects.

5. Cut pictures from magazines and match them with the real objects.

Stringing Beads

1. Allow the child to try to string beads himself. Assist and encourage him if necessary.
2. Tie a knot and string beads for a necklace; let the child wear it if he desires.
3. String beads in different patterns.
4. Take turns in stringing beads by color, shape, size.

Patterns

1. Use two egg cartons, cotton puffs and marbles. Put the cotton puffs and marbles in the cartons in different patterns. Have the child imitate the patterns. Also talk about the *hard* marbles and *soft* cotton.

Use of Touch

1. Take some familiar objects and put them in a can or a bag and have the child close his eyes. Ask him to pull out an object by its name, such as *ball, pencil,* and *orange.* Ask him to pull out an object by its function, such as "you can eat it" or "you can roll it." Ask for an object by its description, such as "it is soft" or "it is long."

2. Put familiar objects in a can and have identical objects for the child to match by touch.

Other Activities

1. Make believe with play furniture, tea sets, dolls, animals, dress-up clothes, or puppets. (The monograph "Puppet Fun For Hearing Impaired Children" is available from the SKI*HI Institute.) Pretend to be a mommy or daddy, clean house, go shopping, go to church, or play school. Take Polaroid pictures or make drawings that can be discussed repeatedly.

2. If a child will be attending preschool or nursery school, go beforehand to take pictures of the child at the school or make drawings to prepare him for the event.

3. Find actual objects a child can manipulate, take apart, put together, turn on (such as old clocks, door locks and keys, hooks, switches, screwdriver and screws).

4. Watch Sesame Street with the child. Help him learn the language and do the activities in which he is interested.

5. Record some favorite stories as you read them to your child. He can later use the book and tape recorder at times when you are busy. Give him directions to turn the page.

6. Go to the park or a school yard to help the child develop skills on the swing, monkeybars, or ladders.

7. Teach the child nursery rhymes and fingerplays to expand his language and listening skills.

8. Go for a walk and collect items in a bag or basket. Sit down and talk to the child about the items.

9. Make a flannel board by covering a hard cardboard with flannel or felt. Cut out various shapes, people, or objects from magazines (backing the pieces with felt) and make up stories using the pieces. Cut a picture of a person into parts to help teach body parts.

10. When setting the table, talk about the shapes of the items on the table.

11. Trace the child from head-to-toe on a large paper and mount the picture on heavy duty cardboard. Hang the picture for him to see.

12. During warm weather, give the child a bucket of water and a paint brush and let him paint rocks, steps, etc.

Reference and Reading List

Caplan, F. (1981). *The first twelve months of life.* Bantam Books, published in association with Grosset and Dunlop.

Caplan, F. (1981) *The second twelve months of life.* Bantam Books, published in association with Grosset and Dunlop.

De Franco, E. B. (1975). *Learning activities for preschool children.* Salt Lake City, UT: Olympus.

Family Home Evening Resource Book. (1983). Published by the Church of Jesus Christ of Latter-day Saints.

Gordon, I. J. (1970). *Baby learning through baby play.* New York: St. Martin's Press.

Gordon, I. J. (1972). *Child learning through child play.* New York: St. Martin's Press.

Marzollo, J. and Lloyd, J. (1972). *Learning through play.* New York: Harper & Row.

Mavilya, A., Marya, P., and Mignone, B. R. (1977). *Educational strategies for the youngest hearing impaired children.* (1977). Jackson Heights, N.Y.: Lexington School for the Deaf.

Menlove, C. K. (1978) *Ready, set, go!* Englewood Cliffs, N.J.: Prentice Hall.

Pushaw, D. R. (1976). *Teach your child to talk.* Fairfield, N.J.: Cebco Standard.

White, B. L. (1978) *The first three years of life.* Avon Books published by arrangement with Prentice Hall.

Home Language Stimulation Program: Total Communication

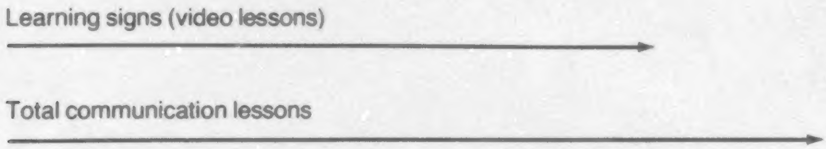
Rationale/Goals

The Home Communication Program enables family members to interact with the hearing impaired child and to make a decision concerning the most appropriate communication method. After a communication base has been established and a communication method has been chosen, it is time for the family to concentrate on language input for the child. It is time for the SKI*HI Home Language Stimulation Program to begin. If a decision has been made for the family to use total communication, language input in the home will be *total communication*. Family members will use all communication signals at their disposal to communicate with the hearing impaired child.

In order to help family members use total communication, the parent advisor will guide the family through the SKI*HI Home Total Communication Program. This program will enable family members to learn total communication and to use it consistently and effectively in the home.

Overview of Program

The Total Communication Program involves two basic components: (a) family members learn to sign (if possible from the SKI*HI video program), (b) family members are given 10 lessons on using total communication consistently and effectively in the home.



Lesson 1:
Family receives overview of learning and using total communication.

Lesson 2:
Family learns how to encourage gestures and baby signing in the hearing impaired child (if child is on this level).

Lesson 3:
Family learns how true signs will unfold in the hearing impaired child.

Lesson 4:
Family learns an expanded vocabulary and how to teach the hearing impaired child a basic vocabulary by using the skill of *simplicity*.

Lesson 5:
Family learns how to teach the hearing impaired child a basic vocabulary by using the skill of *emphasis*.

Lesson 6:
Family learns how to teach the hearing impaired child a basic vocabulary by using the skill of *reinforcement*.

Lesson 7:
Family learns how to consistently sign direct conversation.

Lesson 8:
Parents learn how to consistently sign during the home visit.

Lesson 9:
Family learns how to consistently sign background conversation.

Lesson 10:
Family learns eight skills to improve signing effectiveness.

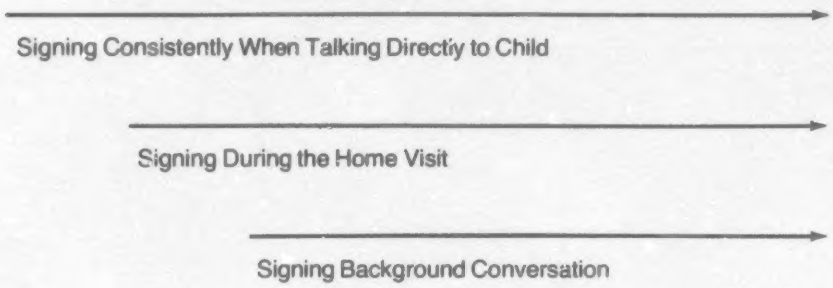
The overall plan for using the Total Communication Program follows:

1. Parent advisor will discuss lesson 1 with the parents: overview of learning and using total communication.

2. Parent advisor will discuss and demonstrate the ideas in lesson 2 and 3 about the development of gestures, baby signing, and true signing.

3. Parent advisor will present and model the ideas in lessons 4, 5 and 6 about how family members can expand their own sign vocabularies and help the hearing impaired child develop a basic sign vocabulary by using the skills of simplicity, emphasis and reinforcement.

4. Parent advisor will introduce three basic strategies in lessons 7, 8 and 9 that will enable family members to sign consistently. The three strategies are not done separately but in this time order:


Signing Consistently When Talking Directly to Child
Signing During the Home Visit
Signing Background Conversation

5. The suggestions in lesson 10 about total communication effectiveness are presented to the family after the skills in lessons 7-9 have been presented, but while the family members are still working on these skills.

Use of Program In SKI*HI Model

The following schematic shows how the Total Communication Program fits into the SKI*HI Model.

HOME TOTAL COMMUNICATION PROGRAM IN THE SKI*HI MODEL

Hearing Aid Program →

Auditory Program →

Communication Program →

Home Language Stimulation Program: →

a) TOTAL COMMUNICATION
b) Aural-oral

Communication lessons 6-8 discuss factors involved in making the communication method decision. By the end of the Communication Program, a decision should be made for the child to be total communication or aural-oral.

The total communication program has all of the language stimulation skills that are in the aural-oral language stimulation program but includes some additional concepts and skills unique to the use of total communication. (see schematic on page 521)

General Teaching Suggestions

Pages 67 to 69 should be reviewed for teaching suggestions that apply to all SKI*HI lessons. However, there are a few suggestions that apply uniquely to this Total Communication Program:

1. Families in the Total Communication Program continue moving through the Auditory Program. It is suggested that one auditory skill and one or two total communication concepts or skills be presented during each home visit.

2. Lessons 2 and 3 are laden with information on language (total communication) development. Depending on the needs and interests of families, parent advisors may want to use these lessons mainly as reference materials rather than formal presentations.

3. Lesson 10 includes 8 skills on the use of effective total communication in the home. Some parents may not be having problems with some of these skills. If so, the skills can be mentioned and parents praised for doing them well. It is up to the parent advisor to decide how many lessons should be devoted to the skills on which parents need help. For some parents, one or two lessons may be adequate for *all* the skills. For other parents one or two lessons might be required for *each* skill.

4. It should be remembered that many of the total communication skills overlap. For example, family members learn to sign (video program) at the same time as they are learning skills from the 10 lessons. Or parents may be working on signing while directing the conversation to the child at the same time they are working on signing the home visit. Parent advisors should monitor parents' use of previously presented skills and encourage them to continue working on these skills as new skills are presented.

5. A reading list for parent advisors pertaining specifically to this program is at the end of the entire program rather than at the end of each lesson (see pages 645–647). A representative total communication materials list for parents is in lesson 10 on pages 642–644. Parents and parent advisors desiring additional total communication material references can order the monograph "Materials For Professionals and Parents of Young Hearing Impaired Children" from the SKI*HI Institute. UMC 10, Utah State University, Logan, Utah 84322.

Lesson 1

Overview of Learning and Using Total Communication

Outline/Parent Objectives

I. Parents will understand that there are three basic processes involved in learning and using total communication.
   A. They will learn signs (if possible from a video program).
   B. They will talk while signing.
   C. They will integrate auditory stimulation into total communication use.

II. Parents will understand the importance of using total communication consistently and effectively in the home.
   A. Using total communication all the time while around the child will ensure the child's language growth.
   B. The child will feel like an important contributing member of the family if he is constantly in an effective total communication environment.

III. Parents will realize that the next ten lessons will help them achieve total communication consistency and effectiveness.

Materials

None

Lesson

Introduction. Parents will need to become aware of three basic processes involved in the exciting experience of learning and using total communication: (a) learning signs, (b) using speech with signs, (c) integrating auditory stimulation into total communication use.

Learning signs. Family members will need to learn how to sign. Signs can be learned in sign language classes, from video tapes, or from sign language books. It is recommended that parents of young hearing impaired children learn signs from a video tape program supplemented by sign classes or books for the following reasons:

1. Sign video tapes enable family members to begin learning signs as soon as they enter a total communication program. A sign class may not be available at the same time the family enters a total communication program. Families entering a sign class at different times pose the problem to the instructor of presenting signs to students at different knowledge and proficiency levels.

2. Sign video tapes enable family members to learn signs in the privacy of their home at times convenient for them. Video tapes also enable family members to progress at their own individual rates. Signs can be viewed again and again for needed practice and review.

3. Sign video tapes include the presentation of sign motion and typically sign evaluations and use of signs in home situations. These features are not available in books.

SKI*HI developed a set of video tapes to teach families total communication in their homes. After nearly a decade of use, it became very apparent that these video tapes were an effective way to teach families total communication. However, there were problems with the video system: (1) The master tapes deteriorated so copies could not be made. (2) The system was expensive. Many programs could not provide playback units and tapes for all families needing total communication instruction. (3) A method to easily disseminate video playback units and tapes was not developed. (4) Media research was not done on such things as how best to present signs or the best video equipment and software to use.

In 1984, a federally financed consortium was formed to research, develop, produce, and distribute total communication video tapes. The consortium included the SKI*HI Institute, Utah State University Media Department, Atlanta Area School for the Deaf, local and state education agencies, video rental outlets, and parent and service organizations. As a result of the consortium's activities, new total communication video tapes are scheduled to be available from the SKI*HI Institute by 1986.

Talking while signing. Total communication means *total* communication. All signals at the parents' disposal are used in communication. Using speech with signs is vital to the concept of *total* communication. Parents need to remember to always speak with their signing. Some parents may be tempted to "drop" their voices and sign only, because their speaking rate may be faster than their signing rate. In addition, some parents may want to "drop" their voices in public because they feel their communication will be less conspicuous. However, parents should be reminded that hearing impaired children need speech as a supplemental clue to sign language. If parents always use their voices, their children will develop better speech. As a matter of fact, hearing impaired children exposed to simultaneous speech and signing, often have as good or better speech than children with comparable hearing losses who receive only speech training. As their communication develops, total communication children children typically increase their use of speech only, decrease their use of signs only, and use a consistent amount of signing combined with speech. Parents should remember: anything which is signed should be said.

A word of caution: When very young children begin total communication, they often drop their voices. Parents frequently overreact and constantly demand that the child use his voice. The child often senses this anxiety and refuses to use voice. For the young child who is first beginning to use total communication, it may be natural to drop his voice since he is concentrating on the sign. However, if the child receives constant exposure to signing *and* voice and perhaps an occasional, gentle reminder to use voice, he will gradually increase his use of voice with signing.

Integrating auditory stimulation into total communication use. Another vital component to *total* communication is continual auditory stimulation for the child. As parents begin the total communication program, they will continue moving through the SKI*HI Home Auditory Program. They will continue to point out and provide meaningful home and speech sounds to the child and reinforce the child's responses to sounds and use of verbalizations. Some parents and parent advisors may want to give the child *special listening help* by occasionally presenting sounds or words to the child first without signs and then with signs.

Example: Mother turns on radio.
Child turns to sound.
Mother says and signs "You hear the radio!"
(or)
Mother says "Where is daddy?"
Child does not respond.
Mother says and signs "Where is daddy?"

Using total communication consistently and effectively in the home. Parents need to realize the importance of using consistent total communication around the hearing impaired child and maximizing their effectiveness of total communication use.

Consistent, effective use of total communication is critical for the child's language development. A team of researchers (Kopchick, Rombach, & Similowitz, 1975) reported that signing to the child only in the classroom does not result in a change of communication behaviors in the home. If a child is exposed constantly to total communication at school but not at home, the child will revert to behaviors of withdrawal and gesturing in the home. The researchers indicated that language can become truly functional only if it is used everywhere that the child is and during all of the child's waking hours.

Historically in many homes of total communication children, half-hearted attempts have been made to learn a few signs that have then been used only occasionally. Many parents have felt that if they took a sign language course and used a few signs when they remembered, their signing obligations would be fulfilled. In many homes, only mothers have signed. Unfortunately many of the hearing impaired children in these families have not developed adequate language skills.

Today, families involved in SKI*HI home programs are taught the importance of signing *all the time* around the hearing impaired child. Parents realize that the hearing impaired child has the same rights as hearing children to be exposed to on-going home conversation.

Hearing children constantly hear talk about such things as the weather, money, sickness, and family relationships, even though the parents are not necessarily directing the conversation to the children. They hear social conversation and learn how to communicate in acceptable ways. They sense socially and emotionally that they are part of an interactive family unit. The deaf child may not develop this sense of belonging to a socially interactive family unit if family members never sign or sign infrequently. The family's use of consistent, effective total communication will enable the hearing impaired child to feel like an important, contributing member of the family and will enable the child to acquire important communication skills.

In order to help family members use total communication consistently and effectively in the home, the following lessons will be presented:

Lesson 1 (this lesson): Overview
Lesson 2: Development of Gestures and Baby Signing

Lesson 3: Development of True Signing
Lesson 4: Acquiring Sign Vocabulary: Simplicity
Lesson 5: Acquiring Sign Vocabulary: Emphasis
Lesson 6: Acquiring Sign Vocabulary: Reinforcement
Lesson 7: Signing Consistently: Direct Conversation
Lesson 8: Signing Consistently: Home Visit
Lesson 9: Signing Consistently: Background Conversation
Lesson 10: Signing Effectively (8 skills)

Review Questions For Parents

1. How will your family learn signs? (answer depends on provisions of local programs)
2. Why is it important to speak while you sign? (see page 564)
3. Why is it important for you to provide your child auditory stimulation as you use total communication? (see pages 564 and 565)
4. Why is it important for family members to sign consistently around the hearing impaired child? (see page 565)

Sample Challenge

At this point in the program, emphasis should be placed on helping the family members learn signs. The parent advisor should make arrangements for family members to learn signs (if not already done) from the SKI*HI Video Tape Program. Challenge should be made to have family members view selected video lessons and obtain 80-100% scores on the expressive and receptive evaluations. If a video program is not available, sign classes, sign books, learning signs from the parent advisor or other local resources should be used.

Lesson 2

Development of Total Communication: Gestures and Baby Signing

Outline/Parent Objectives

I. Parents will understand that the development of total communication involves three stages.
  A. The development of gestures is the first stage.
  B. The development of baby signing is the second stage.
  C. The development of true signing is the third stage.

II. Parents will understand that gesture development is important for two main reasons.
  A. Gestures need to be developed by the child to form a communication system before signs (or words) can be inserted into the communication system.
  B. The child's use of gestures enables him to develop socially and emotionally.

III. Parents will understand that baby signs are the child's attempt to make adult signs. Gestures and baby signs develop in a specific way.
  A. First the child acts reflexively on objects (sucks, grasps).
  B. Then the child brings object to his mouth.
  C. Next, the child imitates gestures and signs of others that he has done before.
  D. Then the child imitates gestures and signs of others that he has not done before.
  E. Finally, the child tries to make gestures and signs on own (is not imitating).

IV. Parents will promote the development of gestures and baby signs.
  A. Parents will respond to the child's use of gestures and attempts to sign (responses including imitating signing or simply acknowledging the child with a smile or a pat).
  B. Parents will use gestures along with their speaking and signing.
  C. Parents will pantomime, play act, and use animation.

Materials

None

Lesson

Introduction. It is important for parents to understand how total communication will develop in their hearing impaired child. There are three primary reasons why this is so. First, parents who have a basic understanding of how signed communication unfolds will not expect signing behaviors that the child cannot do developmentally. Second, parents will be better able to know when to stress particular signing skills based on their child's current development. Third, parents may notice some differences in the development of signs in their child and the development of spoken language. This happens with children using total communication and is completely natural. If parents understand these developmental differences, they will accept them and continue to facilitate language development in their child rather than to worry about the differences and perhaps stifle the development of total communication.

Why might there be differences in how signs and speech develop in the child? When one studies the linguistic structure and historical development (phylogeny) of speech and sign systems, one realizes that there are some differences in the basic natures of these systems and why these differences developed. To begin with, sign systems for the hearing impaired evolved as vivid ways to portray reality. For someone who does not know a language, the pictoral representation (sign) is a more *life-like* representation of objects and events than words and is therefore easier to understand.

Secondly, signing (as used by the deaf) evolved as a multi-expressive, non-linear system. In signing, multi-expression is possible because several body parts can express several ideas at one time. For example, one hand can sign *tree* while the other had signs *looking at the tree* and the face expresses *fear* (so the signer is looking at the tree and is afraid). This complete idea can be expressed at the same instant and does not require a string of spoken words in a particular order (linearity) such as *I was very afraid while looking at the tree.*

Hearing parents may note developmental differences in the child's signing and speech such as the child's possible use of non-linear, multi-expressive signs. Rather than being alarmed, parents should realize that such signing characterizes naturally evolved sign systems and is the child's attempt at joyous, expressive communication. These attempts are a natural part of the child's development of total communication. Other possible differences between sign and speech development will be explored in the next lesson which discusses the development of true signing.

The development of total communication is the main theme of this lesson and the next one. The development of gestures and baby signing will be discussed in this lesson and the development of true signing will be discussed in the following lesson.

General development of total communication. The development of total communication involves three basic stages: (a) gestural stage, (b) baby signing stage (sign jabbering and invented signs), and (c) true signing stage. The development of true signs involves the development of (a) phonology (handshapes), (b) syntax (sign order), and (3) semantics and pragmatics (sign meaning and function). The gestural and baby signing stages last for a few months. The true signing stage takes many years to develop.

The gestural stage forms the basis upon which later sign language development is built. Gestures are vitally important, not only for the child's later language development, but for the child's emotional and social development. The importance of gestures for language, emotional and social development is discussed below.

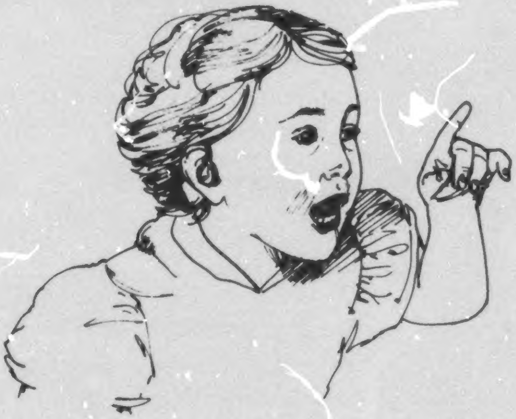
Following this, the use of baby signing will be discussed. Then a discussion of how gestures and baby signs lead to true signs will be presented. Finally suggestions wil be made to parents for promoting the development of gestures and baby signing in the hearing impaired child.

1. **Gestures for Language Development.** It is likely that man's earliest communications were gestures, signs, and drawings. Early man probably depended on visible symbols to convey and preserve ideas. Caves, such as those discovered in northern Spain and dating back more than 20,000 years, contain pictures on the walls. These pictures are completely effective in communicating messages. Pictures are not language (spoken or signed language); yet they are highly effective in communicating messages.

There are other important nonlanguage forms of communication: gestures (the use of motions of the limbs of the body to express oneself), facial expressions, and vocalizations such as grunts, coos, cries. These forms of communication must be developed by the young child if language is to develop. The child first develops a communication system (gestures, facial expressions, etc.) and then symbols (signs or words) are inserted into this communication system. Therefore, a child must be encouraged to use gestures and other nonverbal communication if he is to learn language.

Very young children rely heavily on nonverbal communication. If a parent wants a twelve month old child to get a ball, the child is much more likely to respond if the parent points to the object while talking rather than just saying "Go get the ball."

The child's first words are often accompanied with gestures. The child may try to say "bye-bye" and wave or say "mama" and point to mother.



It is interesting that some parents of hearing impaired children "look down" on the use of gestures, fearing that the use of non-verbal communication will inhibit the child's development of verbal language. In reality, the use of gestures and other bodily expressions enhances the learning of language. In a study conducted in an Italian day-care center, the children who were more vocal and linguistically competent were the ones most active in early gesturing. These same children used more gestures with their speech as they grew older to help others understand their communication.

2. **Gestures for Emotional Development:** Gestures and other forms of nonverbal communication are important not only for language development but for the emotional development of the child. Most nonverbal communication is full of emotional charge such as warmth, coldness,

friendliness, unfriendliness, acceptance, rejection, and suspicion. In fact, a listener often cannot discern the emotional meaning of what is said from the words alone. Nonverbal communication is the primary carrier of emotional meaning in communicative expression.

Early gesturing is important for the development of emotional expression in the child. The following study illustrates this. Sixty-two babies were studied who were birth to 6 years of age. The researcher found that the babies first learned the emotion of excitement and then that excitement split into distress and delight. Distress and delight then split into more emotions until by the time the child was 2 years of age, he had nearly a dozen different emotions. One of the important things the researcher found was that early emotions such as excitement, distress, and delight were largely expressed by nonvocal gestural communication. For example, the excited baby used wild, irregular, jerky movements of the entire body, especially his arms and legs. The delighted child had relaxed muscles and moved his arms and legs in a rhythmic fashion. Infants were assisted in learning these emotions by observing the emotions expressed in the body movements and facial expressions of their parents (Wood, 1976).

3. **Gestures for social development.** Children learn about themselves in relationship to other people and things (socialization) largely by using gestures and other body motions. Young children explore, touch, point, cuddle, wave, and swing their arms and legs to learn about the world around them. This early period of exploration helps the child to learn about people and things around him and to develop a sense of being separate from people and things around him. It also helps the child learn to gain control over his body and influence over the environment.

Data on deaf infants suggests that they are *more quiet* and that their parents permit them to rest more quietly without encouraging exploration, movement, and communication. As a result, the older deaf child may not develop the sense of being a separate human or having control over his body or environment. Accounts of delayed toilet training and feeding problems with deaf children point to this problem (Schlesinger and Meadow, 1972). An important way any child develops feelings of separateness and control is in "power struggles" with parents. When the child refuses to go to the toilet or refuses to go to bed or refuses to eat, he is attempting to gain control over people and situations. Parents of deaf children may protect the deaf child and deny him opportunities of exploration, movement and self-assertion. In addition, they may use more restrictive communication such as "no," "stop that," "don't" than parents of hearing children since a stern look and shake of the head may be easier for the deaf child to understand than a verbal explanation. The result may be that the deaf child does not develop the important sense of separateness and control. However, if the child is encouraged to move, gesture, explore, and communicate and, if parents avoid the overuse of restrictive communication ("no", "sit down"), a sense of independence will be developed. In addition, the child will feel free to explore and learn about his relationships to other people and things.

Use of baby signing. The hearing impaired child will progress from gestures to early attempts at sign use. This attempt at communicating in signs is called baby signing. Often the child will jabber in unrecognizable signs to himself. Or the child will attempt to imitate adult signs. However, the signs the child uses are immature forms of adult signs. For example, rather than signing *mother* with a 5-hand on the chin, the child may just extend one finger to the chin. Schlesinger and

Meadow (1972) witnessed baby signing that included the following differences from adult signing: (a) the child had the right configuration (finger position) but the hand was in the wrong place (placement); (b) the child had the right placement but wrong configuration; (c) more rarely, the child had the right configuration and placement but moved the hand incorrectly.

In addition, the child may invent signs in baby signing to express desired meanings. For example, one observer noted that a very young hearing impaired child squeezed her hand in the air to sign *catsup* and signed *milkshake* with a mixer movement.

Finally, baby signing is characterized by unique intonation. Baby signing may be more rapid and less controlled than later child signing.

How gestures and baby signs lead to true signs. How does the infant progress from early gestures and baby signing to *true* sign language? Probably the most famous description of an infant's progression from primitive hand motions (such as gestures and baby signing) to true symbol use (true signing) was made by the Swiss psychologist, Jean Piaget. Piaget described the first period an infant goes through as sensori-motor. It lasts from birth to about 2 years of age. Leonard (1978) described the child development during this sensori-motor period:

Stage 1 (0-1 month): The child interacts reflexively with his environment. The child sucks. The child searches for desired objects by head movements and mouth openings.

Stage 2 (2-3 months): The child develops motor coordination needed to bring a hand to his mouth.

Stage 3 (4-8 months): The child begins to imitate familiar gestures and behaviors (behaviors that he can already do). For example, if the child can point, he may see the parent point and then imitate that behavior.

Stage 4 (9-11 months): The child begins to imitate unfamiliar (novel) gestures and behaviors seen in others. For example, the child may see the parent clap and imitate it for the first time.

Stage 5 (12-18 months): The child begins to produce new behaviors independently rather than imitating others.

Stage 6 (19-24 months): The child attempts to think of things mentally. He does not have to be looking at something to imitate it. The child begins to imitate someone or something that is not present. For example, the child may remember seeing a big brother stomp and will repeat that behavior.

The child then moves to a second period in his life, the preoperational period which marks the appearance of symbols and words (language). In this period the child begins to develop the ability to make something *stand for* something not present (a signed or spoken word stands for an idea). For example, the child knows that the word *cat* or the sign for *cat* means *cat* even though a cat may not be present in the room. This period is usually from 2 to 7 years.

The six stages in the sensori-motor period are necessary if the child is to arrive at the preoperational period, the period of true language. It is interesting to note that the six stages necessary for the child to arrive at *language* involve gestures, body motions, and imitations (baby signing). The child moves from these primitive expression forms to the preoperational level of using *true* linguistic symbols for communication.

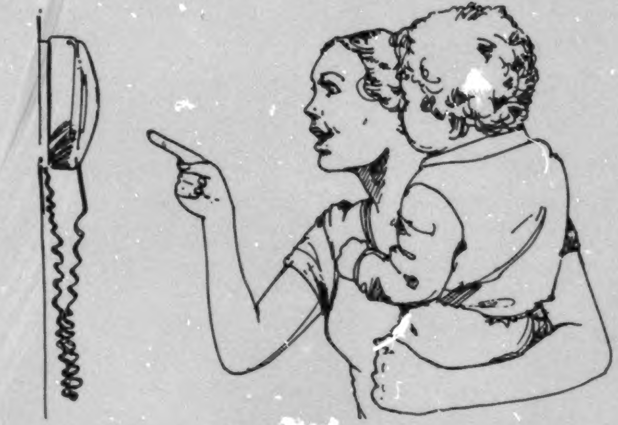
Two researchers (Tomlinson-Keasey & Kelly, 1974) indicated that hearing parents may not encourage early gesture development in the hearing impaired child. Because of this, the child may not successfully progress to the preoperational stage. It is likely the child will develop mental images of the world, but if the child is not exposed to easily perceived symbols (such as gesture and signs), he may not be able to communicate about the images. As the parents use gestures and signs and encourage the child's use of gestures and baby signs, the child will successfully move to the true language (preoperational) stage. The suggestions below will help parents promote gesture and baby signing development that will lead to the child's acquisition of language.

Skills For Parents

Promoting the Development of Gestures and Baby Signing*

1. The most important thing a parent can do to encourage the child's use of gestures, baby signing and other nonverbal communication is to respond to the child. When the child points, or opens and closes his fist *(gimme)*, or smiles, or stretches, or kicks, or coos, or grunts, or jabbers in unrecognizable signs, the parents should respond to the child. Simple and warm responses are best. Perhaps a returned smile or a pat on the cheek would be sufficient. Or perhaps a signed response would be appropriate. Often to imitate the child's gestures provides strong reinforcement. The child will want to gesture again. In addition, parents need to be responsive to any and all of the child's attempts to imitate adult signs.

2. Parents should feel free to use gestures along with their formal signs. The use of gestures leads to signs. It does not prevent the child from learning signs. Parents' use of gestures and facial expressions need to be a natural part of *total communication* to their hearing impaired child. For example, parents may want to use such gestures as "bye-bye," "come here," or "I don't know" when signing sentences containing these expressions. Or they may want to sign "Get me the ball" and then point to the ball or "That's the telephone" and then point to the telephone.



3. Parents should feel free to be inventive. If parents want to use pantomime or devise gestures or other signals, they should feel free to do so. They need to realize that all expressions of communication, whatever they may be, will enhance their communication with the child. Perhaps parents will want to act out situations, create a variety of interesting facial expressions,

* The SKI*HI Program "Developing Cognition in Young Hearing Impaired Children" provides excellent supplemental information to parents on promoting gestures and baby signing development.

and invent new gestures and new body motions. Such animation is very important. *Parents should feel free to be expressive.* Once expressions of communication are there, the child will move quickly into acquiring a formal symbol system such as the use of true signs.

4. For a child who simply does not gesture and consequently does not move to baby signing (is not developing through Piaget's six stages in the sensori-motor period), special help may be needed. To begin with, several tests are available to determine which of the six sensori-motor stages the child is on. Two of these tests are: (a) Piagetian Measures of Cognitive Development Up to Age Two by Mehrabian, A. and Williams, M. (1971). (b) An Instrument for Assessing Psychological Development by Hunt, J. and Uzgiris, I. (1966).

The SKI*HI Program "Developing Cognition in Young Hearing Impaired Children" provides a complete, informal program in helping the child develop Piagetian skills. Other more formal training programs are also available. These are listed at the end of this lesson.

Review Questions For Parents

1. Why are gestures important for language development? (see page 569)
2. Why are gestures important for emotional development? (see pages 569 and 570)
3. Why are gestures important for social development? (see page 570)
4. What is baby signing? (see pages 570 and 571)
5. Put the following stages of development in the right order.

_____ Child brings objects to mouth.

_____ Child makes new gesture behaviors on his own.

_____ Child imitates gestures of others that the child has done before.

_____ Child acts reflexively on objects (sucks, grasps, etc.).

_____ Child imitates gestures of others that the child has not done before.

(answers: 2, 5, 3, 1, 4)

6. What are some things you as parents can do to help your child develop gestures and baby signing? (see pages 572 and 573)

Sample Challenges

1. Use the following gestures this week along with your speaking and the signs you know:

"bye-bye"

"all gone"

"hi"

"come."

2. Whenever your child gestures this week, respond by imitating his gestures.

3. At least three times this week, pantomime or play act a situation (such as crawling on all fours and barking like a dog or imitating dances on television). *Be relaxed and animated.*

References

The following readings will enable parents to promote sensori-motor and pre-operational (language) development in their hearing impaired child.

Activities (Vol. 3). Ann Arbor: Michigan University Press, 1977. (Quoted from Exceptional Child Education Resources, 1977, 9 No. EC 092 304).

Adkins, D.C., Crowell, D.C., Daley, G., Dunning, M., Loveless, P., Noyes, M., and Okimoto, A. (1971). *Home activities for preschool children.* A manual of games and activities for use by parents with the children at home, to foster certain preschool goals. Honolulu: Hawaii University.

Brearley, M., Ed. (1975). *The teaching of young children: Some applications of Piaget's learning theory.* New York: Schocken Books.

Brown, S.L., and Donovan, C.C. *Developmental programming for infants and young children.*

Cole, Kathryn J., and Stevenson, Anne H. (1976). *A sequential curriculum for early learning.* Saginaw County Child Development Centers, Inc.

*Dunn, M. L. (1982). *Pre-sign language motor skills.* Tucson, AZ: Communication Skills Builders. (3130 N. Dodge Blvd. Tucson, AZ 42050).

Furth, H. (1970). *Piaget for teachers.* Englewood Cliffs, NJ: Prentice-Hall.

Hayott, M.A., and Stellino, P.A. *The parent's manual.* A manual of supplementary activities for homebound children with severely handicapping conditions. New York: Teaching Resource Center/Telecommunications Project, Center for Advanced Study in Education, no date.

Kamii, C. and DeVries, R. (1974). Piaget-based curricula for early childhood education. *The preschool in action.* Ed. R. Parker, Boston: Allyn and Bacon, Inc.

Kogan, N. (1976). *Cognitive styles in infancy and early childhood.* New York: Wiley. Lavatelle, C. (1970). Piaget's theory applied to an early childhood education curriculum. *American Science and Engineering.* Boston.

Lowenthal, B. (1974-75). What parents can do to help their special preschoolers. *Academic Therapy,* 10, 181-185.

MacNamara, J. (1972). Cognitive basis of language learning in infants. *Psychological Review,* 79, 1-13.

Marzollo, J. and Lloyd, J. (1972). *Learning through play.* New York: Harper and Row Publishers.

Painter, G. (1971). *Teach your baby.* New York: Simon and Schuster.

Sharp, E. (1970). *Thinking is child's play.* New York: E.P. Dutton and Co.

Weikart, D., Adock, D., McCelland, D., and Rogers, L. (1971). *The cognitively oriented curriculum.* Washington, D.C.: National Association for the Education of Young Children.

* Highly recommended

Lesson 3

Development of Total Communication: True Signing

Outline/Parent Objectives

I. Parents will realize that the understanding of total communication development will enable them to do two important things.
   A. It will help parents have appropriate expectations for their child's signing.
   B. It will help parents know what signing skills to emphasize and when.

II. Parents will understand how true signs generally develop.
   A. The child will put his hand in the right place; then the child will make the correct sign motion; finally the child will make the correct hand shape.
   B. The child will first make *pointing* signs, then *copying* signs (signs which are outlines of the objects represented), next *representation* signs (signs which include visual representation of some characteristic of the objects), and finally *symbolic* signs (signs that do not look at all like what they represent).

III. Parents will understand that sign handshapes often develop in a predictable order as described in the lesson. Parents will also understand that the child may make handshape errors.
   A. One error is *substitution* (example: child puts correct handshape for *father* in wrong place and it becomes the sign for *deer)*.
   B. Another error is *reduction* (example: child forgets to include ending motion for giraffe sign so that it looks like *choke)*.
   C. A third error is *assimilation* (example: child uses wrong handshape for *potato* so sign looks like *time)*.

IV. Parents will know that the development of sign order occurs in much the same way as the development of spoken word order (i.e. subject phrase, verb phrase, subject-verb combination, subject-object phrase, verb-object phrase, subject-verb-object combination). However, there are some ways that the development of signs differs from the development of spoken words (example: early appearances of locatives, use of collapsed signs, use of action sign repetition, use of *finish* sign as tense marker).

V. Parents will know in general how sign meanings develop (i.e., the development of agents, actions, objects). Parents will understand that their hearing impaired child may have some special ways of expressing word meaning categories (for example: *feeling* signs made with bent finger, *female* signs made close to the chin, while *male* signs made close to the forehead).

Materials

None

Lesson

Introduction. The general development of signs occurs in a way very similar to the development of spoken language. However, there are some differences. Parents need to be made aware of how language develops and the differences that may exist between sign and spoken language development. This lesson has four sections that deal with: (a) the overall development of true signs, (b) the development of handshapes (phonology), (c) the development of sign order (syntax), and (d) the development of sign meaning and function (semantics and pragmatics).

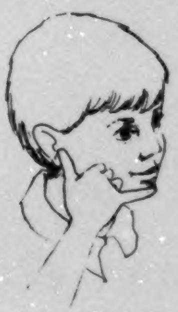
Overall development of true signs. In general, signs develop the same way speech develops if the child is exposed to consistent signing input. The many studies on deaf infants of deaf parents who sign and the few studies on deaf infants of hearing parents who sign verify this claim. (Hoffmeister, Goodhart, and Dworski, 1978). However, there are a few general differences that parents will want to know about.

In general, the first sign is acquired 2-3 months before the hearing child's first spoken word (Hoffmeister and Wilbur, 1978). In a similar vein, the size of the child's sign vocabulary and the number of signs per sentence may develop faster than they do in the verbal language development of hearing children. McIntire (1974) reported a vocabulary of about 20 signs at age 10 months (the age at which the hearing child is likely to say his first word). Two-sign expressions were noted at 10 months (two spoken words generally emerge at 18 months) and three-sign expressions were noted at 18 months.

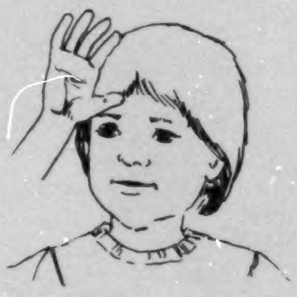
True signs generally develop in the following manner:

1. Location: The child will put his hand in the correct place.
2. Movement: The child will move his hand in the correct way.
3. Handshape: The child will put his fingers in correct positions. (Hoffmeister and Wilbur, 1978)

In addition, many true signs develop from iconic to abstract. This means the child may make a sign that looks like an object (for example, the sign *telephone* looks like the receiver) before using a sign that does not look at all like the object it represents.



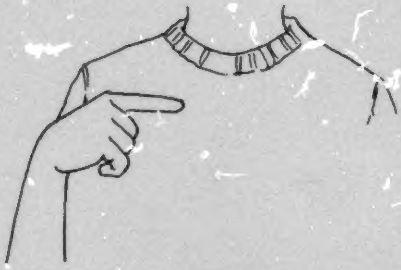
Iconic Sign: Telephone
(looks like what it represents)



Abstract Sign: Father
(does not look like what it represents)

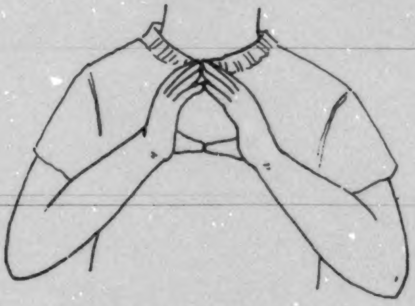
A psychologist named Wundt (in Blanton and Brooks, 1978) said that the development of signs can also be described in the following way:

1. **Directing signs:** pointing to self or others for signs such as *me* or *you* or pointing to body parts for body parts signs.



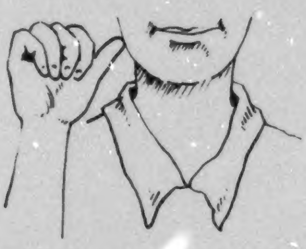
example of directing sign: *me*

2. **Copying signs:** signs which include outline of the object represented (such as the sign *ball*).



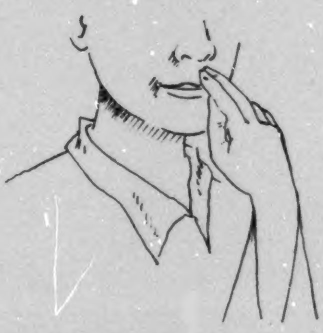
example of copying sign: *ball*

3. **Representative signs:** signs which include visual representation of some property or characteristic of the object (such as the sign for *girl* which outlines the strings on a girl's bonnet).



example of representative sign: *girl*

4. **Symbolic signs:** signs with no connection between the hand representation and what is being represented (such as the sign for *funny*).



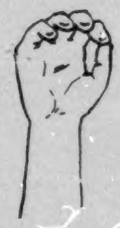
example of symbolic sign: *funny*

The natural development in the child to more and more abstract signing is evident in Wundt's descriptions. It is only when the child can do abstract signing that emotions and subtleties of meaning can be expressed. This developmental level is vital for the child's emotional well-being.

Let us now look more specifically at how three important aspects of signing develop: handshapes, sign order, and sign meaning and function.

Sign handshape development (phonology). Just as hearing infants learn to say sounds that make up words, so do hearing impaired infants learn handshapes that make up signs. The handshapes used in signs are called *cheremes*. Hearing children acquire certain sounds before they do others. Hearing impaired children acquire certain cheremes before others. Typically the *A* handshape appears first. Then the following four handshape stages occur:

1. *5, S, L, G, C,* and baby *O* (*O* handshape with only thumb and index finger rather than all fingers)



baby O

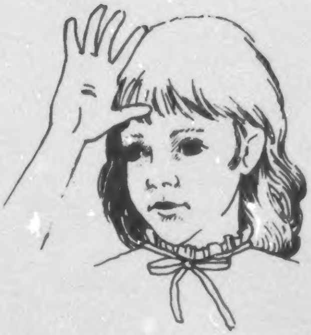
2. *B, F,* and adult *O*
3. *I, Y, D, P, 3, V, H, W*
4. *8, 7, X, R, T, M, N, E* (McIntire, 1977)

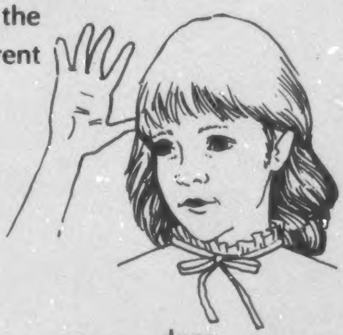
The child may be able to produce a handshape (i.e. the *S*) in one sign and not another if factors such as motion or placement make the other sign too difficult. As the child matures through these stages, there is more finger contact with the thumb and more extension of weaker fingers (ring and little finger). Difficult finger positions (such as crossing fingers) are achieved in stage 4.

During the course of speech development, the child makes many errors in sound production. Young children who sign make similar errors. However, the errors are with handshapes rather than sound production. For example, young hearing children make three common speech errors. These are indicated below. Notice that the hearing impaired child makes the same errors but the errors are in handshape instead of sound production.

1. Substitution Errors:

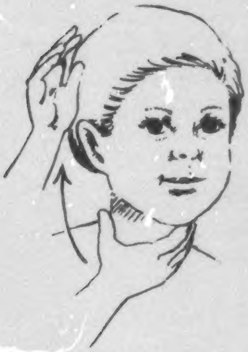
examples of speech errors:	**examples of sign errors:**
father ↓ bother	father ↓ deer
(child says *bother* instead of *father* because words sound similar.)	(Child signs *deer* instead of *father* because both signs are made in a similar way; both signs have the same configuration but different placement)

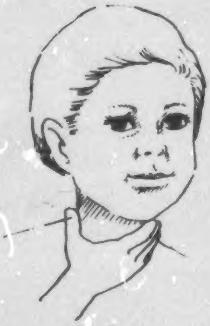

father


deer

2. Reduction/Avoidance Errors:

examples of speech errors:	**examples of sign errors:**
stop → top cat → ca	giraffe ↓ choke
(child leaves off part of a word or sound)	(child omits part of the sign *giraffe* and in so doing changes the meaning of the sign to *choke*)


giraffe


choke

3. Assimilation Errors:

examples of speech errors:

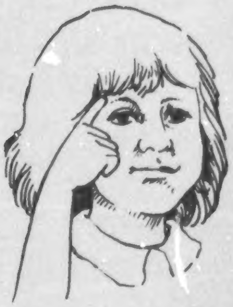
lamb
↓
nam

(child makes both sounds in the same place in his mouth but uses the wrong initial sound in *nam)*

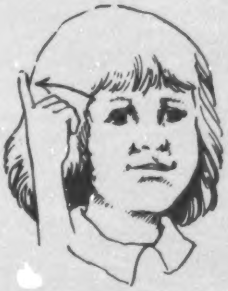
examples of sign errors:

penny potato
↓ ↓
think time

(child makes both signs in the correct place but either moves the sign in error, such as *penny* becoming *think* or makes the configuration in error such as *potato* becoming *time)*



think



penny

As the child matures, handshape errors will be more and more subtle. For example, the child may make the sign for *mother* with the wrong handshape (a 1-hand may be used instead of a 5-hand). Later on, the child may distort the 5-hand configuration for *mother* by bending the fingers. Parents will want to be aware of the development of signing handshapes described above and the possible handshape errors that their child may make in the course of handshape development.

Sign order development (syntax). The hearing impaired child develops sign order in a way similar to how hearing children acquire spoken word order. That basic order is:

1. subject phrases and verb phrases *(cookie, eat)*
2. subject-verb combinations *(I eat)*
3. subject-object phrases *(Mommy sock)*
4. verb-object phrases *(eat cookie)*
5. subject-verb-object combinations *(I eat cookie)*

Brown (1970) described these five general stages more specifically.

Stage I:

1. Child uses noun phrases *(shoe, my dog)* and verb phrases *(come, go bye-bye)*.
2. Approximate length of sentences is 1.75 words.

Stage II:

1. Child uses 2-3 inflections (ing, plurals, irregular past such as *went* and *ran).*
2. Child uses catenatives *(gonna, hafta, wanna).*
3. Approximate length of sentence is 2.25 words.

Stage III:

1. Child uses negatives, usually incorrectly. Negatives used include *no, not, can't,* and *won't.* Child usually uses noun phrase and negation + verb phrase (such as *Mommy no go* or *I not like that).*
2. Child asks wh-questions (what, who, etc.) and yes/no questions.
3. Child uses a few more inflections: probably possessives, articles (such as *a, an, the)* and some regular past tenses *(walked).*
4. Approximate length of sentences is 2.75 words.

Stage IV:

1. Child uses negations correctly.
2. Child uses all inflections (includes 3rd person verbs such as *she comes, he goes,* helping verbs, and *to be* verbs that stand alone).
3. Child co-ordinates and conjoins sentences (I go and see Daddy).
4. Approximate length of sentence is 3.5 words.

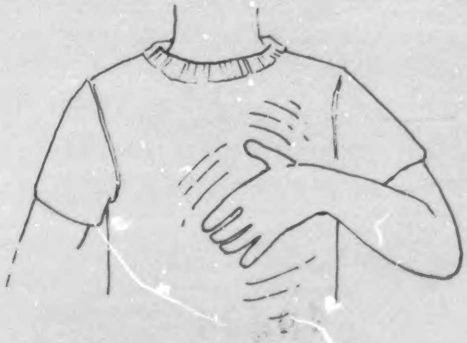
Stage V:

1. Child uses complex sentences.
2. Child uses passive verbs.
3. Approximate length of sentence is 4.0 words.

There are some ways that the development of sign order differs from the development of spoken syntax that Brown described above. These differences will be briefly discussed below:

1. **Use of Locatives:** The child's expression of where things are or directions (called *locatives)* may appear earlier in signed than spoken syntax. This is because the point is used as the sign for many spatial references and is easier for the child to acquire than verbal locatives.

2. **Collapsed Signs:** Parents may note some modifications of subject-object relations in the sign syntax development of their child. For example, the spoken sentence, "Fingerspell to me" might be indicated as the sign *fingerspell* turned towards the body. The child might say "Fingerspell to me" but make one sign which encompasses the total idea (rather than signing all three words). Or the child may say "tickle me" but make only one sign *tickle* on his body. This type of signing is called collapsed signing and constitutes meaningful expression on the part of the child.



example of collapsed sign: *tickle me*

3. **Sign Repetition:** The child may use sign repetitions such as *I will jump-jump*. Such a construction is rarely heard in spoken syntax. Whether this type of usage is a modification of spoken syntax or is done for emphasis remains unknown.

4. **Negation:** The development of negation occurs in an interesting way in signing: (a) The headshake *no* may be used alone or with the *no* sign. The *no* sign is often used at the beginning or end of the sentence but not within the sentence, *No me go.* (b) The child may sign the *not, can't* signs; *can't* is usually acquired before *can.* These negatives are signed within the sentence but may be used incorrectly *(I not go).* (c) Negative signs are used correctly (Lacey, 1972).

5. **Past Tenses:** Often the hearing impaired child will use the sign *finish* as a main verb in isolation to mean *I'm through.* The child may then use the *finish* sign for a past tense marker. The *finish* marker will probably precede the main verb in such sentences as *Me finish do that* or *You finish see that.* This use parallels the hearing child's incorrect use of such past tense verbs as *goed, bringed,* and *teached.* Both are instances of the child learning a rule (add markers to show past tense) but using the rule incorrectly (called overgeneralizing). Finally, the child will move to correct signing of past tenses using the verb and then the past tense marker such as *I saw a truck* (signed as see + past tense marker).

6. **Questions:** The deaf child's development of questions can be divided into three stages:

Stage 1: At first, the child does not really undestand *wh* questions signed by adults *(what, who, where, why, how* questions). The child will probably use a general *what* sign (the *what/huh* sign deaf adults use). Yes/no questions do not require more than a questioning look. So at this first stage, the child has probably already mastered these questions.

Stage 2: The child will use *where, what,* and *who* signs. The child will probably not respond correctly to the *wh* questions signed by others.

Stage 3: The child will respond appropriately to *wh* questions. The child will also add some new signs such as *how* and *how many* to his repertoire. (Fisher, 1974).

7. **Inflections:** Signed inflections include word endings or beginnings (such as *un*dress, cry*ing*) and articles and adjectives (such as *a, an, the, this,* and *that).* If parents sign inflections, the child's development of signed inflections will basically be the same as verbal inflection development (see Brown's order of verbal inflection development). However, some researchers have noted differences in sign and spoken inflectional development.

Hearing children first acquire inflections that follow rather than precede the word. For example, in Bulgaria, the articles and adjectives *the, this,* and *that* come at the end of words. Bulgarian children acquire these words very early. In Germany, France, and America, articles precede words. These articles are acquired relatively late (for example the child acquires word endings such as *ing* and *s* before articles such as *a* and *the).* In addition, hearing children learn inflections first that are the easiest to hear.

These same principles apply to hearing impaired children except that they attend more to how easy the inflection is to *see* rather than to hear. As a result, the hearing impaired child may sign articles before or at the same time as *ing* or *s* (plurals) because article signs are much easier to see than the signed *ing* or *s.* In addition, signed past tense inflections may be acquired earlier than verbal past tense inflections because they are so easy to see (Schlesinger, 1978).

if parents are aware of verbal syntax development as described by Brown and also know of possible differences in signed syntax development from verbal development, they will be in a better position to know what to expect in their child's total communication development.

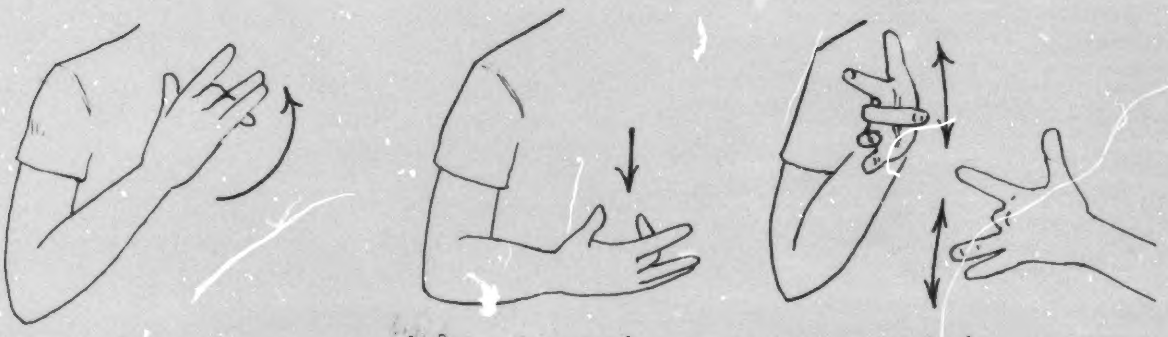
Sign meaning and function development (semantics and pragmatics). Children's early utterances indicate understanding of relationships among objects, people, and events. For example, children know that certain words show action ("Mommy *come"*), certain words indicate that something or someone acts *(agents* such as *"I go"),* or that certain words receive action *(objects* such as "push *car"*). This area of language development is called semantic development. Children also use utterances to express different functions (such as to request, demand, greet, ask, question, deny, describe, and so forth). This type of development is called pragmatic development.

The hearing impaired child's development of sign meaning and function basically parallels the hearing child's development of word meaning and function (Caccamise et. al., 1978, Bellugi and Klima, 1972). As with hearing children, hearing impaired children who sign will develop word meaning categories. Three categories (agent, action, object) were mentioned above. Other word meaning categories include:

1. **Notice:** child draws attention or greets something (*hi* shoe).
2. **Recurrence:** child indicates more or another (*more* milk, *another* one).
3. **Attribute:** child describes something (*big* cow).
4. **Possessor/possessed:** child indicates something is possessed (mine *chair)* or someone possesses *(mine* car).
5. **Locative:** child indicates where something is or direction of something (sweater *chair*, want *up*) (Brown, 1970).

The hearing impaired child who signs may use some different expressions of word meaning categories than hearing children. For example, action signs are made several inches away from the body (example: run, jump, walk). State verbs (passive) are made close to the body (example: is, are, was). Feeling signs are made with the middle finger bent. Female signs are made close to the chin while male signs are made close to the forehead. The child will learn these and other meaning categories and use them in his daily signing.

Feeling Signs



feel depressed excited

The general order of sign meaning development is briefly outlined below:

1. **Agents**
    - a. proper names (Daddy, Mommy)
    - b. common nouns (dog, chair)

   articles (a, an, the) may be used here.

Note: Agents are usually over-extended at first. That is, the child will sign *dog* to refer to all 4-legged creatures or sign *Daddy* for all men.

2. **Actions**
3. **Attributes**
    - a. relational words (big, little)
    - b. demonstrative words (this, that)
    - c. location words (here, there)
    - d. time words (now, today) (DeVilliers and DeVilliers, 1978).

How these word meanings are combined into sentences was discussed in the last section. Parents will want to be aware of the development of sign meaning in their hearing impaired child as described above.

Parents will benefit by a basic understanding of how their hearing impaired child will develop total communication. If they understand how sign handshapes, order, and meaning develop, they will be better able to have appropriate expectation levels and not expect signing behaviors that the child developmentally cannot do. In addition, they will know what signing skills to emphasize and when. How parents can specifically promote the development of signs will be discussed in the next lessons.

Review Questions For Parents

1. Put the following in the order a child generally learns a sign:

______ child makes the correct sign motion
______ child puts hand in the right place
______ child makes the right handshape

(answer: 2, 1, 3)

2. The child usually makes abstract signs (signs that do not look like what they represent) before iconic signs (signs that do look like what they represent). true/false

(answer: false)

3. Give a couple of examples of sign errors a young child might make.

(see pages 579 and 580)

4. What are some ways signs may develop differently than spoken words?

(see pages 581 and 582)

Sample Challenges

None

Lesson 4

Developing A Basic Signing Vocabulary: Simplicity

Outline/Parent Objectives

I. Family members will implement one or two activities listed in this lesson each week to help them develop basic sign vocabularies.

II. Parents will use the skill of sign simplicity when communicating with their hearing impaired child.
   A. Parents will use total communication telegrams while they are learning signs; in time, they will become more comfortable signing more words of each sentence.
   B. Parents will use easy handshapes and functional, iconic signs to keep their language input simple.

Materials

None

Lesson

Introduction. For most family members, learning basic signs is not particularly difficult. Signs can be learned from videotapes, classes, and books. However, family members need to know of ways to supplement these basic methods in their efforts to build good, simple signing vocabularies. This lesson presents signing activities that will help family members expand their basic signing vocabularies. In addition, this lesson will discuss how family members can specifically help the hearing impaired child learn a basic sign vocabulary. One way of doing this is to implement the skill of simplicity which is discussed in this lesson. The next two lessons will discuss more skills that will enable family members to help the hearing impaired child acquire a basic sign vocabulary.

Activities to help family members learn signs. Families who are learning total communication typically learn signs from videotapes, classes or books. Videotapes are preferred since the learner is able to see the signs in motion and view the signs used in real-life situations. As the family is learning signs and fingerspelling, there are several activities that can be done to give family members practice at sign use. These activities follow. The parent advisor should present one or two activities each week, along with whatever lesson is being presented. Parent advisors and family members should feel free to think of and try activities not included in this listing.

Activities for learning signs.

1. After the learner knows how to make a few signs, a list of these signs should be put in an obvious place. For example, if the family learns ten new signs from a sign language class or

videotape, these ten signs should be listed. Drawings showing how the signs are made can accompany the list. Such drawings, also showing a picture of the object or concept being signed, are commercially available or may be copied from sign language books. The list can be put on the refrigerator door, near the dinner table, or at some other frequented place. In that way family members, including the hearing impaired child, will constantly be exposed to the signs and will be reminded to use them as often as possible.

2. An old saying goes: "Use a new word five times a day for one week and the word will always be yours." If this is conscientiously applied, wonders can happen. If new signs are used several times each day for about a week, family members will remember the new signs. A basic vocabulary will then grow quickly.

3. Families may want to have "silent hours." During a selected period of time during the day, family members will not use their voices but will sign everything that is said to each other. Good times for "silent hours" are breakfast, lunch, or dinner time; just before bedtime; meal preparation time; or during specific projects or jobs (raking leaves, washing car, planting garden, picking up house, doing dishes, washing and folding clothes). "Silent hours" are particularly beneficial in helping family members learn to understand signs made by others.

4. Families with young children will find signing bedtime stories enjoyable. Older brothers and sisters should be encouraged to sign stories to the younger hearing impaired child. There are several books available with the signs drawn under the story line. Sample titles and places where these books can be obtained are listed below.

Books:	**Available From:**
Saggy Baggy Elephant	Sign Language Store
Three Little Kittens	8753 Shirley
Great Big Car and Truck Book	P. O. Box 4440
	Northridge, CA 91328
	(Toll Free [800] 423-5413)
The Dog Book	Mafex Associates, Inc.
Fun Days	90 Cherry Street
Learning to Count	Box 519
Great Big Animal Book	Johnstown, PA 15907
Clock Book	National Association of the Deaf
Mealtime At the Zoo	(NAD)
Tommy's Day	814 Thayer Avenue
Spring is Green	Silver Spring, MD 20910
A Book About Me	
(many, many more)	

Note: When signing a story to a hearing impaired child, the signer should be positioned across from the child. The story book is held facing the child so the pictures can be seen. Some mothers prop up the book so both hands will be free for signing. On occasion, the child can be placed next to or on the lap of the signer. The child may want to hold the book while the parent points out pictures and uses signs in front of or slightly to the side of the child.

In addition to stories, many families enjoy signing songs. Since songs move quite slowly, the beginning signer enjoys a sense of accomplishment. In addition, the musical element makes "song signing" a lot of fun. There are some commercially available song books in sign. For example, "Songs in Signed English" and "You've Got A Song" are available from the National Association of the Deaf (814 Thayer, Silver Spring, MD 20910). However, parents may prefer signing simple songs that they already know and use around the house.

5. Many mothers go on weekly "signing walks" with their young children. These walking adventures (which could be done in a car or on bicycles) provide excitement and incentive to learn new signs. A mother may want to take her children to a nearby park; to a construction area; to a farm or a garden; on a nature walk down the street; to a candy store, ice cream store, clothing or grocery store; to the school grounds; or to the post office. These adventures are excellent times to teach new vocabulary to young children. This vocabulary should be appropriate to the situation. The children look forward to these occasions and may remember the signs learned on their adventures far longer than other signs.

6. Parents may want to occasionally sign instructions to their hearing children without voice. If the child does not understand, voice should be added. For example, Mother would tell brother Joey in sign (without words) to "Please bring me the milk." If Joey registers uncertainty, Mother would sign the sentence again with her voice. Hearing children should be reinforced warmly for their responses to signs.

7. Sign language learning should be enjoyable and often playful. There are several commercial games and activities available to promote the learning of sign language: sign playing cards, sign bingo, sign flash cards, sign dot-to-dot, sign cookie cutters, sign puzzles, sign peg boards, sign stick-ons, and books such as "Play It By Sign" which contains sign game ideas. These games and activities are available from Sign Language Store (8753 Shirley, P.O. Box 4440, Northridge, CA 91328) and National Association of the Deaf (814 Thayer, Silver Spring, MD 20910). The use of games is often the best way to encourage older, sometimes reluctant, siblings to learn signs. Family members are also encouraged to use home-oriented games that do not require commercial cards or game boards such as the following:

a. *Look and Find.* Mother signs the name of an object in a room that the children must find. The difficulty of the task (how hard it is to locate the object or how difficult the sign is) depends on the children's abilities. A variation of this would be for mother to give the children old catalogs. Mother would then sign objects to be found and the children would circle or cut out the pictures of the objects in the catalogs. A second variation would be for mother to cut pictures out of old magazines. Mother would sign the names of objects and the children would then point to the correct pictures.

b. *Guessing Games and Riddles (I Am Thinking of Something).* Many families enjoy guessing games. Mealtimes are often ideal times for these games since the family is together and the games encourage positive, happy feelings. In one guessing game, a family member describes something in sign. Other family members guess (in sign) what is being thought of. For example: the person (whose turn it is) signs, *black, hard, shiny, You eat it.* Family members guess until they get the right answer (licorice drops).

Twenty questions can be a fun mealtime guessing game. One family member thinks of an object and other family members try to guess it by asking questions about it. Family members sign questions and the player whose turn it is responds with *yes* or *no* signs. If after 20 questions family members are not able to guess the object, the person whose turn it is wins.

Example:		Person taking the turn:
1. Family member #1:	Is it alive?	no
2. Family member #2:	Is it in this house?	yes
3. Family member #1:	Is it in this room?	no
4. Family member #3:	Is it in the living room?	yes
5. Family member #1:	Is it smaller than my hand?	yes
6. Family member #3:	Is it a decoration?	no
7. Family member #3:	Is it on a larger object?	yes
8. Family member #2:	Is it made of wood or cloth?	no
9. Family member #2:	Is it metal?	yes
10. Family member #1:	Is it on the front door?	yes
11. Family member #1:	Is it the doorknob?	yes!

c. *Name That Sign.* Another mealtime game is called "Name That Sign." One person introduces a new, unknown sign and family members guess what the new sign means. If no one can guess the meaning of the sign, the signer identifies it. During the course of the meal, several new signs can be introduced. The person who guesses most of the meanings of the new signs is the winner.

d. *Simon Says (Follow the Leader).* Parents of young children will enjoy this game in sign. The parent signs, "Simon says ______" (do an action such as *jump* or *sit down).* The children must follow the instruction. However, if the parent merely signs *jump* or *sit down* without signing *Simon says,* the children do not have to do the action because Simon did not say. *Simon* could be (a) signed as *man* or *boy,* (b) fingerspelled, (c) represented by an *s,* or (d) *I say* could be substituted for *Simon says.*

A simpler version would be for the parent to sign a simple command for the children and the children would respond, being reinforced for correct responses.

e. *Sign Charades.* Most families love charades. A sign charade is part sign and part charade (pantomime). The presenter thinks of a title of a book, movie, or song. The presenter can use only one sign per title and must act out the rest of the words. (If the title is one word, no signs can be used.) The presenter acts out one word at a time in the title. The family must guess that word before the presenter moves on to the next word. Often small connector words in titles such as *a, the,* and *an* are indicated by gesturing *small* with the hand (the first finger and thumb of the right hand are extended to the left, the finger is above the thumb).

f. *Sign Password.* Many families enjoy playing sign password. Four players are required (two teams). One person on each team has the same word (such as *pencil).* The player with the word gives the other person on his or her team a one-word clue (such as *write).* If the team member does not guess the word (in sign), the other team takes a turn. The player with the word on the other team gives his or her teammate a one-word clue (such as *wooden).* And so it goes until the word in question (pencil) is guessed.

g. *Add-on-stories.* One family member begins telling a story in signs, making it up as he or she goes. When the family member desires, he or she discontinues the story and another family member picks up the story, continuing in sign. This process continues until the story is completed.

h. *Indian Rhythms.* Family members decide on a sign category (animals, family names, foods, etc.) and assign each person a name within the category. For example, the family may select the category of *animals*. Family members may be designated as follows:

Mom—lion
Dad—goat
Beth—cat
Glen—dog
Wayne—sheep
Donna—cow

Next, family members sit in a circle. All members clap out rhythms together. One rhythm could be slap thighs two times, clap hands twice. Another rhythm could be slap thighs twice, clap hands twice, and then click fingers. A rhythm is selected and all family members begin in unison. At the end of the rhythm one person signs an animal name, making sure not to break the rhythm.

Examples:	(a) slap		(b)	slap
	slap			slap
	clap			clap
	clap			clap
	click			*dog* (sign)
	dog (sign)			slap
	slap	or		slap
	slap			clap
	clap			clap
	clap			*cat* (sign)
	click			
	cat (sign)			

The person whose name is signed *(dog)*, in this case Glen, will have the next turn. Glen will sign another animal at the end of the next rhythm (example—*cat).* The person whose name is cat, in this case Beth, will have the next turn. And so it goes with no one breaking the rhythm. When the rhythm is broken a new sequence is begun. Family members will want to try a variety of categories to learn many signs.

8. Family members will find their signing skill greatly increased if they interact with deaf adults and children. Families who make the effort to attend deaf church services, captioned movies, deaf sporting events, local and state association for the deaf activities, theaters of the deaf, and school for the deaf events will be pleased at how their signing skills will improve. Family

members should not worry about how slowly or clumsily they sign around deaf persons. Deaf people certainly understand that many persons are beginning signers. They are delighted that others are making the effort to learn signs.

9. Families may want to meet with other families to learn signs and practice them. Or pehaps regular classes with families and parent advisors can be organized. Some states have family sign language sessions conducted by the parent advisor. Children and parents attend the sessions to learn and practice signs. The sessions are geared to the vocabulary of the children. Interesting games and activities can be conducted. Families can take turns bringing refreshments to the sessions.

10. If the family members are learning signs by means of videotapes in the home, sets of picture/sign/printed word cards can be obtained commercially or made at home to be used along with the tapes. In this way, younger children and the hearing impaired child can be shown pictures of the objects and concepts being signed and can understand and be included in the family learning activity.

11. Cooperation between home and school is required for children who are learning signs in a center-based program and at home. Parents may want to request vocabulary lists from the teacher so new school signs can be used in the home. Many teachers appreciate sign lists from home indicating signs family members are working on. The teacher can then use these signs whenever possible in the classroom. Some parents and teachers plan out sign units ahead of time (such as zoo, animals, foods, weather signs) and then the same signs are emphasized at both school and home.

Some parents ask their hearing impaired child at the end of each day to tell them the new signs learned in school that day and then the parents write down the new signs and post them in a place visible to all family members. In that way, the family members can use the new signs frequently around the hearing impaired child.

If there are great discrepancies between how signs are made at home and at school, parents may want to consult with the teacher and decide upon mutually acceptable sign formations. This may minimize the child's confusion about different signs. Some parents may find the child correcting their signs if the child has learned signs differently at school. Most parents do not mind this and, in a spirit of learning, accept the suggestions from the child. However, children need to realize that there is no one, absolutely perfect way to make every sign. Parents may want to explain to the child that the sign can be made in two or three ways. Or they may want to impress upon the child that different signers have slightly defferent ways of signing, just as they do talking. Mother may want to say, "This is how Mother makes *happy*. This is how Daddy makes *happy*." (She makes the motion slower or otherwise slightly different.)

Activities for learning fingerspelling. Learning to fingerspell is an important part of acquiring a basic sign language vocabulary since many signs involve hand configurations which are the manual alphabet letters. However, fingerspelled words should be used minimally around young hearing impaired children because fingerspelling requires reading skills.

It should be noted that words with simple fingerspelling may be perceived as signs by the young child. The child might then make an attempt to imitate the fingerspelled words just as the child would attempt to imitate signs. Parents should encourage the young child's attempt at fingerspelling. The following activities will assist family members to develop fingerspelling proficiency:

1. Family members should practice fingerspelling in syllables: A-MER-I-CA. It is not a good idea to spell words out loud while fingerspelling: A-M-E-R-I-C-A. Words fingerspelled in syllables are much easier to read as well as to fingerspell. Practice fingerspelling in syllables in front of a mirror.

2. While riding in a car, fingerspell passing signs. Fingerspell as many signs as you can as quickly as you can: *School Lane, Anderson's Meat Mart, Stop, Yield,* etc. Family members will find this excellent practice.

3. Fingerspelling can be done quite unobviously in most places. Family members may want to drop their arms and let their fingers spell out what other people are saying in church meetings, family reunions, PTA meetings, classes, and other gatherings.

4. Some fingerspelling-signing drills that can be done in the home are:
    a. A family member fingerspells a word; the receiver signs it back.
    b. Someone signs a word; the receiver fingerspells it back.
    c. A family member fingerspells a question; the receiver may fingerspell or sign back the answer.

These drills will also give practice in reading fingerspelling.

5. Have some "fingerspelling sessions" where the entire time is devoted to fingerspelling without voice. For example at mealtime, someone might fingerspell p-a-s-s t-h-e s-a-l-t, p-l-e-a-s-e. Fingerspelling while doing household chores may be fun: I n-e-e-d t-h-e d-u-s-t p-a-n, p-l-e-a-s-e.

6. Try fingerspelling radio and TV commercials. Fingerspell songs on the radio. It is good practice to fingerspell to yourself (talk to yourself) as you move about your home or on the job.

7. Some families enjoy fingerspelling games.

a. *Definitions.* Two teams are necessary for this game. One team (team A) finds a word in a dictionary and fingerspells it to the other team. Then each member of team A fingerspells a definition. All of the definitions but one are make-believe. For example, team A fingerspells *dibble* to the other team. Then the first person on team A fingerspells *a flower,* the second person fingerspells *to write* and the third person fingerspells *pointed shovel*. Team B tries to guess which fingerspelled definition is right. In this case, *pointed shovel* is correct. Then the teams reverse roles.

b. *Dictionary Games.* Some dictionaries contain names of capitals of states, state flower, populations, and other interesting trivia information. Some families enjoy trivia games. For example, one person can fingerspell state capitals and other family members will try to identify the states in which the capitals are located (using fingerspelling).

c. *String Alongs.* One family member fingerspells a word: b-o-o-k. The next family member thinks of a word that begins with the last letter in the word *book* which is *k*. He or she will then fingerspell a word that starts with *k* such a k-i-t-c-h-e-n. The next player then will fingerspell a word that starts with *n* and on and on it goes.

d. *Guessing Games, Password, etc.* These games have been described on pages 587–589 as signing activities. These same games can be fingerspelled instead of signed for family fun.

Teaching the child a basic sign vocabular sign simplicity. Language develops in the hearing impaired child the same basic way as it develops in the hearing child. A description of how language is developed is in lesson 3.

In order for language to develop, the hearing impaired child must be exposed to signing in the same basic ways a hearing child is exposed to spoken language. Parents of hearing children use three important principles to stimulate language development in their children. These principles are (a) simplicity, (b) emphasis, and (c) reinforcement. Parents of hearing impaired children using total communication will need to use these same three principles. However, they will need to be aware of some things, when applying these three principles, that parents of hearing children will not. The first principle to be discussed is *sign simplicity*.

Sign simplicity. When a parent talks to an infant, the parent uses simplicity. Words are simple. Sentences and phrases are short. For example, a recording of a mother talking to her 18-month-old hearing impaired child revealed the following: "You silly." "Let's put your aid on." (hearing aid) "Whoa." "Wait a minute." "There now." "Hi there." "Hi Andy." "You hear me, huh?" "Huh?"

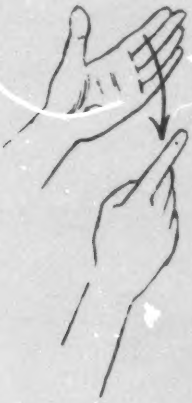
Notice the short sentences and the simple words.

Parents who use total communication will need to use simplicity (short sentences and simple words). There are three specific skills that parents who sign will need to be aware of as they attempt to use simplicity: (1) total communication telegrams, (2) use of easy handshapes, and (3) use of iconic signs.

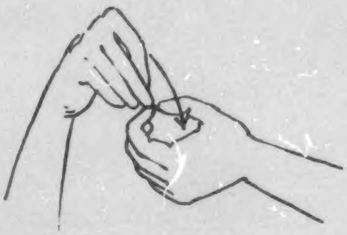
1. **Skill 1. Total Communication Telegrams:** Parents who are learning sign language will not be able to sign every word in every sentence or phrase they utter, because they will not know all of the necessary signs. Parents will be using "total communication telegrams." Parents should realize that this simplified form of total communication is completely acceptable as they increase their signing vocabulary. In fact, the child will experience less frustration initially if he is exposed to signed telegrams. If the child is exposed to every little word and word ending when first learning total communication, he will probably have difficulty figuring out what's what. The very young child's short attention span is another factor pointing to the initial use of *total communication telegrams.* If every word is signed, the child may not attend to the entire sentence and may miss some important meaning.

The parent might want to say to the child, "Go and get the cookie over there." The total communication telegram would be signed, "go-get-cookie" (parent points where). Or the parent might say, "This is the cat's nose," and sign, "this-cat-nose." Still another example might be, "Where is your coat?" The parent signs, "where coat?" Signs should be used at the same time as the corresponding words are spoken.

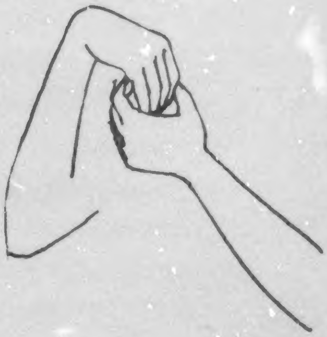
Example: "What is in your pocket?"
parent says: "What is in your pocket?"
parent signs: "What --- in ----- pocket?"



What



in



pocket?

As parents increase their sign vocabularies, they will become comfortable signing more and more words of each sentence.

2. **Skill 2. Use of Easy Handshapes:** Another factor in keeping total communication simple is being aware of simple signs which require simple movements and handshapes.

For example, a young child will have an easier time understanding, remembering, and producing the simple sign *dog* than the more difficult sign *puppy*. The handshape for dog is easier than puppy. The sign *mouse* will be easier for the child than *rat*. *Boat* will be easier than *ship*. *Sky* is a much easier hand motion than *heaven*. It will be obvious to parents as they learn signs which ones have simple handshapes and motions and which ones do not. Of course, as the child grows older and the parents become more proficient at signing, more difficult signs will be used.

3. **Skill 3. Iconic Signs.** Parents will be aware of using signs that are easy to relate to the objects they represent. These signs are iconic signs. They look like what they represent instead of being abstract signs which look completely different from the objects or ideas they represent. For example, *ball, toothbrush, baby, coat, pencil, hat,* and *telephone* are iconic signs because they look like the objects they represent. The sign *ball* looks like an outline of a ball. The sign *telephone* looks like a telephone receiver. However signs like *stove, school, lady, boot,* and *sock* are less iconic; there is little resemblance between these signs and the objects they represent.

Studies (Konstantareas, et al, 1978; Mayberry, 1976; Polzer, 1979) indicate that iconic signs are generally easier for the child to learn than abstract signs if the iconic signs are also functional or meaningful words for the child. Parents need to remember that functional signs associated with the child's daily activities are the most important signs to use. But if the signs are both functional and iconic, they will be easier for the young child to remember and use. As the child grows older and acquires more language, emphasis will not need to be placed on the use of iconic signs.

In summary, parents will remember to use simple signed phrases and sentences. They will use total communication telegrams until they are capable of signing all words in sentences. Parents will emphasize functional signs that are simple because of easy handshapes and motions and because of their being iconic (looking like the objects they represent). As the child grows older, more difficult signs will be used and attention will not need to be placed on iconic signs.

Review Questions For Parents

1. What is a total communication telegram? (see pages 592 and 593)
   Demonstrate an example of one.
2. What is an iconic sign? (see page 593) Show me three iconic signs.
3. Is the sign for mouse easier than rat? (yes)
   Is the sign for puppy easier than dog? (no)
   (For this question, parent advisor will want to use easy vs. difficult signs that the parents know.)

Sample Challenges

1. During the week, use total communication telegrams involving the signs you know. Be prepared at our next visit to demonstrate five telegrams you used during the week.

2. Stress the use of the following iconic signs this week: turtle, kitty, book, butterfly, and bird.

3. Play the games of "Signed Simon Says" and "Signed Twenty Questions" with family members this week.

Lesson 5

Developing a Basic Signing Vocabulary: Emphasis

Outline/Parent Objectives

I. Parents will use the skill of sign emphasis when communicating with their hearing impaired child.
   A. Parents will emphasize signs that are meaningful for the child (here and now signs, name signs, etc.) by increasing the frequency of these selected functional signs.
   B. Parents will emphasize signs appropriate for the child's language development.
   C. Parents will emphasize signs appropriate for the child's visual development.

II. Parents will continue to implement the sign and fingerspelling activities presented in Lesson 4.

Materials

None

Lesson

Introduction. As discussed in the last lesson, a hearing impaired child must be exposed to signed language in the same basic way a hearing child is exposed to spoken language. The three basic skills parents use to stimulate language development are simplicity, emphasis and reinforcement. Sign simplicity was discussed in the last lesson. Sign emphasis will be discussed in this lesson and will include the topics of emphasis of functional signs and emphasis of signs appropriate to the child's language and visual development. Sign reinforcement will be discussed in the next lesson.

Emphasis. Parents of hearing infants use *emphasis* in their communication; that is, they *repeat certain key words again and again*. This skill is sometimes called *Increased Frequency of Language Input*. For example, the parent might say:

"Where is your *nose?*"
"Huh?" "Where is your *nose?*"
"Oh, I see your *nose.*"
"There is your *nose.*"
"What a cute *nose!*"

Vocabulary development is dependent on the frequency with which a child is exposed to signs and the meaningfulness of the situation in which the signs are used. Meaningful language experiences determine when and what vocabulary words are learned. The words a child hears most are the words he develops first. The more infrequently he hears the words, the later in life he will develop the vocabulary. If he does not have meaningful experiences with a word, the child will never develop meaning for that word.

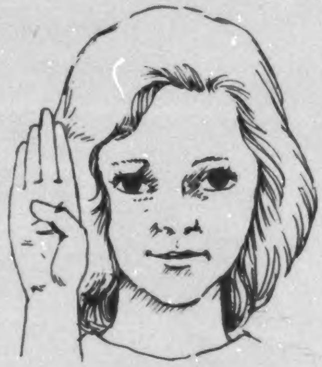
A hearing child needs to hear a word at least 200 times before he uses it. The hearing impaired child may miss many presentations of words. He may not hear words on T.V. or being used by other children at play or being used by mother talking on the phone. Therefore, he needs many more exposures to words. Consequently, one of the most important tasks for parents is to emphasize key signs by increasing the frequency of their use.

Emphasis of key signs does not mean that parents will use *only* the key signs: Nose, nose, nose. Rather, they will sign all the signs they know in the conversation, but emphasize (repeat) certain key words as in the example above. In selecting signs to emphasize, parents need to be aware of three skills:

1. **Skill 1. Functional signs:** Signs that are emphasized should be functional or meaningful to the child. If a child is tugging on his shoe, obviously *shoe* and *pull* would be meaningful signs. Or if the child accidentally knocks his plate off the table, *break* and *plate* would be meaningful signs. Or if the phone rings and the child turns to it, the sign *telephone* would be meaningful.

Signs about what the child is doing at any present moment are meaningful. Whenever possible, parents will want to make sure the objects are visible or the events are occurring. For example, if the child is given an apple, *apple* should be signed while the child is looking at the apple or eating it. Or if the child's dog dashes into the room, that event should be signed as it happens.

Name signs are typically functional words for young children. A name sign refers to and identifies the child and other important people in the child's life. Everyone's name sign in a family should be different. In choosing a name sign for the child and other family members, the sign for the first letter of the name is often applied to the idea upon which one chooses to base the sign. For example, if the child is named Timothy after his father, (and the father's name sign is a *T* tapped once on the chin), then little Timothy's name sign could be *T* tapped twice on the chin. Or if the child's name is Betsy and she has huge, beautiful eyes, *B* could be tapped close to the eyes. The name sign for a child with dimples could be the first letter of the name tapped by the dimples. Or for a child with a cheery disposition who laughs a lot, the first letter of the child's name could be used in the sign *laugh*. One word of caution is necessary. Parents may want to substitute



Name sign for Betsy

fingerspelled names for the name signs as soon as the child is reading and fingerspelling. The reason is that the name sign tends to stereotype particular physical or personality attributes of the person which the person may no longer want (dimples, laughs a lot, etc.). In addition, many hearing impaired children never learn the real names of family members and friends if name signs are used exclusively. They do not realize that their friends have names like Tommy and Shelly instead of sign identifiers only.

Teaching functional sign use. In teaching the parent how to emphasize key functional signs, the parent selects five or six meaningful signs to emphasize in a particular activity. Then the parent advisor models the use of the selected meaningful signs in an activity while the parent charts how frequently the signs are used. For example, the parent advisor may use the following target signs at the following frequencies:

soap	𝍸
dirty	|||
wash	||||
clean	𝍸
water	|||

The parent advisor then repeats the activity, increasing the frequency of the selected signs while the parent again charts key signs used. The parent advisor and parent then discuss the parent advisor's increased use of the selected signs. For example,

soap	𝍸 𝍸	(doubled sign use)
dirty	𝍸 ||||	(tripled sign use)
wash	𝍸 |||	(doubled sign use)
clean	𝍸 𝍸	(doubled sign use)
water	𝍸 ||||	(tripled sign use)

The parent advisor then charts how frequently the parent uses selected functional signs in an activity and challenges the parent to improve on those frequencies during the week.

Families should not feel that they need to plan a lot of formal learning activities (such as games, role playing, etc.) in order for the hearing impaired child to learn functional signs. The amount of time hearing parents spend with their hearing children in planned learning activities is minimal. Rather, throughout the day parents should provide communication emphasizing key functional signs. Communication can be about such things as what the child is doing or what the parents are doing. As parents sign throughout the day, they will also want to use the principle of simplicity that has already been discussed.

2. **Skill 2. Signs Appropriate for Child's Language Development:** Another consideration in selecting signs to emphasize is the language development of the child. Parents emphasize different words depending on the child's language development. They emphasize different signs to the child whose language level is 6 months than to the child whose language level is 5 years.

A description of total communication development is in lesson 3. Based on this development, the following suggestions are made in emphasizing particular types of signs to the child:

While many researchers maintain that children on beginning language levels need emphasis of concrete words (nouns), a word of caution is in order. It is perhaps dangerous to use only noun signs at first as many hearing impaired children become too accustomed to labeling objects and later have difficulty learning other kinds of signs. In general, parents should emphasize nouns, verbs, and descriptive signs while the child is very young. Some researchers believe that too many young children receive only noun-verb stimulation while descriptive signs (adjectives) are slighted. Parents will want to use many descriptive signs such as *dirty, happy* while the child is very young. Care should be taken to use adjectives that describe the child's feelings *(sad, mad, scared)*.

Parents will next want to move into the emphasis of preposition signs *(in, on, out, off, over, under)*, pronouns *(I, me, my, mine)*, and possessives *(Tommy's Billy's, Mommy's)*. Parents will also want to incorporate some adverbs *(quickly, slowly, quietly)* into their total communication.

The parent advisor should help parents identify the general language development stage of the child (example: child is on noun-verb-descriptor stage). Then parents will know which type of sign construction to emphasize next (example: parent could next emphasize prepositions).

Some parents have requested a specific guide for selecting signs and sign combinations to emphasize based on their child's language development. The following guide may be of help.

Parents should work on the level just above the one that the child is capable of doing. For example, if the child is using primarily noun and verb combinations, the parents may want to emphasize the next level, adjective and noun combinations. Parents should sign the words to be emphasized and all other signs they know.

GUIDE TO EMPHASIS OF SIGNS AND SIGN COMBINATIONS

1. Emphasis of *nouns, adjectives, and verbs: (one word stage)*

Nouns.	Where's your *shoe?* I see your *shoe*. There's your *shoe*. Hi *shoe!* (parent emphasizes the *shoe* sign but signs all other words he or she knows).
Adjectives.	What a *dirty* face. My you are *dirty, dirty, dirty*. Let's clean your *dirty* face.
Verbs.	*Run* fast. *Run, run, run*.

2. *Emphasis of verb and noun* combinations:
   Eat apple. Eat your *apple*. Come on, *eat* your *apple*.
3. Emphasis of *noun and verb* combinations:
   Can you see *dolly crying? Dolly is crying*. Poor *dolly is crying*.
4. Emphasis of *adjective and noun:*
   One cookie. Just take *one cookie* please.
5. Emphasis of *noun and predicate adjective:*
   Baby is *happy*. *Babby* is *happy* now.
6. Emphasis of *possessive and noun:*
   I see *Tommy's nose, Tommy's nose*.

7. Emphasis of *preposition and noun:*
   Get *in* the *box*. Yes, *in* the *box*.
8. Emphasis of *verb and preposition and noun:*
   Sit on your *chair*.
9. Emphasis of *preposition and adjective and noun:*
   Get *in* our *yellow car*.
10. Emphasis of *preposition and possessive and noun:*
    Get *on Pam's tricycle*.
11. Emphasis of *pronoun and verb:*
    You play now. OK?
12. Emphasis of *verb and pronoun:*
    Kiss me, Sammy.
13. Emphasis of *possessive pronoun and noun:*
    That's *my cookie*.
14. Emphasis of *possessive pronoun and adjective and noun:*
    That's *my big hat*.
15. Emphasis of *pronoun and verb:*
    You sit still!

Once these constructions have been established with the child, they can be combined into an infinite number of phrases and sentences.

Some examples are:

1. Verb and preposition and possessive and noun:
   Please *sit on Mommy's lap*.
2. Noun and verb and preposition and noun:
   That *cat is looking in* our *window*.
3. Pronoun and verb and preposition and noun:
   You sleep in that *bed*.

3. **Skill 3. Signs Appropriate to Child's Visual Development:** A third consideration in selecting signs to emphasize is the visual development of the child.

Newborn to 2 months. At birth, infants can only focus on objects that are within 9 inches. The focal distance varies from baby to baby ranging from 7 to 15 inches. The newborn will have difficulty seeing the communicator's face and hands outside of this range. Parents need to try to keep signs and gestures close to the newborn and emphasize large, simple signs.

From 2 to 4 months. As the maturation process takes place, the infant's visual attention develops. By 2 months the infant notices patterns, brightness, and movement. It is at this time that babies begin to become aware of gestures and signs as hand motions. They will begin to attend to these signals. They will *track* (visually follow) the parents' hand movements from one place to another if the movements are slow. Parents will need to be aware of the importance of signing slowly during this time. They will want to emphasize gestures and signs that have a minimal amount of motion rather than those that have complicated motion patterns. For example, the sign for *king* will be more difficult for the child to perceive at this age than *home* since king involves a larger, more complicated motion pattern. *Dream* will be harder to see than *drink*. *Giraffe* will be harder than *cow*.

From 4 months to 8 months. By 4 months the infant will be as skilled as an adult in the ability to focus from one object to another. Until this time, the infant clearly sees only one single object before him. The child at this age will be able to see facial expressions, gestures, and signs clearly and focus on individual signs in a series of signs if the signs are made slowly and if spacing is used between signs. Parents will still want to sign slowly and space signs so that signs in a series can be perceived. They will still want to emphasize signs with easy hand configurations and simple motions.

From 8 months to 12 months. By the time the child is 12 months old, he has fully developed adult vision. The child is able to focus easily on all objects, perceive the motions of gestures and signs, visually follow a series of signs and focus on each individual sign within the series, and see fairly difficult motion patterns within signs. Parents of children at this age will still want to sign slowly and clearly, and to emphasize simple signs with easy motions. As the child grows older, the parents can pay increasingly less attention to these concerns. Parent advisors will help the parents identify the visual development of the child so sign stimulation will be appropriate.

Review Questions For Parents

1. What are some signs that are meaningful for your child and should therefore be emphasized?

2. How will you emphasize the signs you select? (see pages 595–597)

3. Because of your child's language and visual development, what type of signs (or sign construction) should you emphasize? (see pages 597–600)

Sample Challenges

1. During the week, emphasize the following five signs that are meaningful for your child when he goes to the bathroom. (dirty, soap, wash, clean, toilet)

2. Be prepared at our next visit to demonstrate the bathroom activity, using each sign at least eight times during the activity. (This will be a 100% increase over the frequency you demonstrated today.)

3. Since your child knows name signs but not action signs, emphasize the following phrases this week.

Wash face.	*Play* ball.
Throw ball.	You *come* here.

Lesson 6

Developing A Basic Signing Vocabulary: Reinforcement

Outline/Parent Objectives

I. Parents will use the skill of reinforcement (providing positive after events for the child's use of signs).
   A. Parents will use praise words and signs.
   B. Parents will use pleasant expressions and physical contact as positive after events.
   C. Parents will use the skill of expansion; parents will expand the child's attempt to sign by signing total communication telegrams or signing complete sentences when the parents have the ability to sign all words in a sentence.

II. Parents will continue to implement the sign and fingerspelling activities presented in Lesson 4.

Materials

None

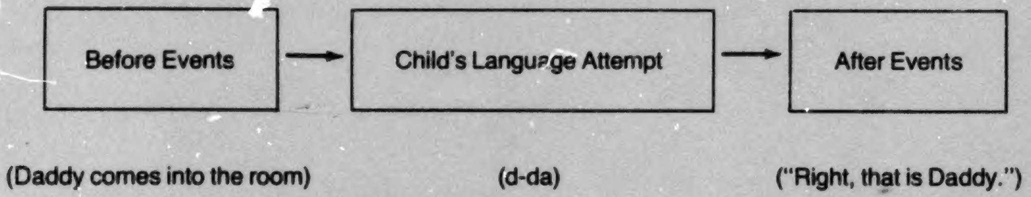
Lesson

Introduction. As parents are using sign simplicity and emphasis around the hearing impaired child, the child will attempt to make many signs. One of the most important things parents can do when the child signs is to provide positive after events. Parent advisors should discuss the following material with parents on providing positive after events.

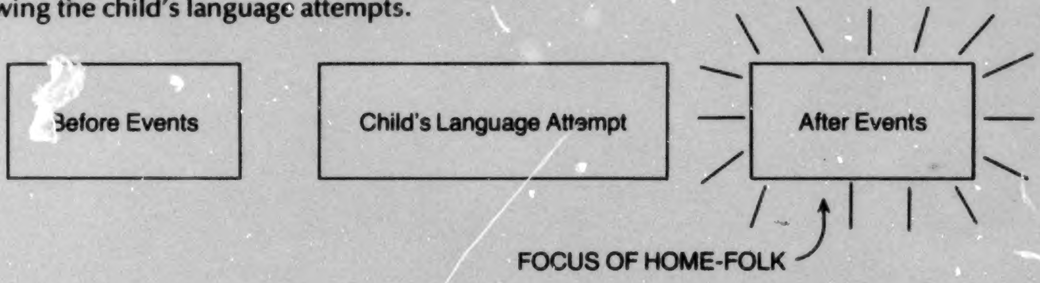
Being responsive to child language. Language acquisition is a complex problem which includes many factors. One of the important factors is the frequency of the language behaviors which the child attempts. The home situation should maximize the number of these language attempts so that the child finds success and positive results from his attempts at language behavior. There are some easy and practical ways for parents and others in the home to insure that the child will gain these positive outcomes from his language attempts. The general principle is that the child's language attempts will increase if those attempts are followed by positive results in the home. This presentation will attempt to give some guidelines to parents on how to facilitate such language attempts by using after events.

The structure of proper response. How parents and others in the child's environment respond to the child's language attempts determines the frequency of the child's language attempts. The study of language development has shown that the things or events which *immediately follow* these attempts at language, control how frequently the attempts occur in the future. These events which follow a child's language attempts may be called AFTER EVENTS.

Additionally, it has been shown that the things which come prior to a child's language attempt may help the child or encourage him to make an attempt at language (for example, pointing to an object and asking a question or showing the child a picture and asking a question about the picture). These events may be called BEFORE EVENTS since they occur before the child's language attempt. Together these events make up a chronological sequence which looks like this:



All language behavior may be looked at and analyzed by this simple three-step process. Sometimes the child simply begins verbalizing without any observable before events and many times no observable after event occurs in response to the child's language attempt. It is important for parents and others in the home environment to work towards maximizing the occurrence of *positive after events* after as many child language attempts as possible during the time the child is making such attempts. Maximizing these after events will increase the frequency of the child's language attempts and will maintain the child's *motivation* to continue attempting language. Hence, the focus of those in the home should be in assuring that positive after events occur following the child's language attempts.



Positive after events. Positive after events may be given in many different ways. Some recent research indicates that the total impact of communication is made up of 7% verbal (i.e., the words we say), 38% vocal (i.e., tone, intonation—the way we say it), and 55% facial-visual (i.e., the expressions, gestures—how we say it). If this is true, then which words we use isn't nearly as important as the tone of voice we use and our facial-gestural enthusiasm in responding to children's language attempts. Simple attention from a parent in the form of looks, smiles, assorted vocal sounds and verbal praise is a powerful after event to a child. It gives him a feeling of success in his language attempt. Other types of after events are also important to the task of assisting language growth in the child. One of these types is what language teachers call *expansions*. Expansions are useful and functional in the home environment as after events which can also result in auditory stimulation to the child. Expansions are after events which repeat the child's language attempts or *expand* them into grammatically longer and correct language units. An example would be where a child says, "Daddy go," and immediately Mommy says, "Daddy is going to work," an expanded version of the child's initial utterance. Expansions are functional because they not only communicate attention, but if used with enthusiasm and excitement, they communicate positive acceptance. This reinforcement increases the probability of the child making another language attempt. Expansions are perhaps the best after events which can be used to accelerate and increase language in children. If used properly, they fit into the structure as follows:

Before Event	Language Attempt ("Mamma go.")	Expansion After Event ("Mamma is going to town.")

Other types of after events include words of praise, facial expressions, nearness and physical contacts of various sorts. Below is a listing of potential after events which can be used to increase children's language attempts. It will be apparent that the type of after event used will depend on the age of the child, his current level of language, and what the parent or person delivering the after event is doing.

1. **Possible praise signs and sign phrases:**

   Good
   Excellent
   Good thinking
   I love you
   That shows a great deal of work
   You really pay attention
   You should show this to your father
   Show grandma your picture
   Go say that to Daddy
   Thank you
   That's right
   I'm pleased with that
   Great
   That's interesting
   That's clever
   Exactly
   I like that
   Good job

2. **Expressions:**

   Smiling
   Winking
   Nodding up and down
   Looking interested
   Laughing
   Clapping

3. **Nearness and physical contact:**

   Touching
   Hugging
   Sitting in lap
   Patting head, shoulder or back
   Stroking arm
   Shaking hand
   Holding hand
   Moving close and listening

4. **Sign Expansions:**

The skill of expansion enables parents to expand the child's language into complete sentences or from complete sentences to more complex patterns. Examples of expansion from one, two or three signs to simple signed sentences are:

EXAMPLES OF EXPANSION

Child's utterance:	**Parent's response:**
1. Child attempts to sign a word.	Parent signs word and puts it back into a simple sentence "Ball, here is your ball. What a big ball."
2. Child uses telegraphic language.	Parent repeats signs in a complete simple sentence.
(a) Ball up.	(a) Throw your ball up.
(b) Dadda bye-bye.	(b) Daddy has gone bye-bye.
(c) See doggie.	(c) You see the doggie.
3. Child uses limited vocabulary.	Parent adds new vocabulary words.
(a) Cow.	(a) See the *brown* cow.
(b) Want water.	(b) You want some *cold* water.
(c) Come mama.	(c) Mama will come *fast.*
4. Child uses few sentence forms, (perhaps only simple, present tense sentences).	Parent expands child's sentences into varied sentence forms.
(a) 1. Go party. 2. Go to store.	(a) Varying tenses: 1. Tomorrow you will go to the birthday party. 2. We went to the store this morning.
(b) I eat cereal.	(b) Compound or complex sentences: You are sitting down and eating your cereal.
(c) 1. Put boat in. 2. I get down. 3. Doggie hurt. Bandage.	(c) New phrases and clauses: 1. Put your boat *in the closet.* (prepositional phrase) 2. *When you're finished eating,* get down. (adverbial clause) 3. Your doggie *that's hurt* needs a bandage. (adjective clause)
5. Child uses incorrect language	Parent expands child's incorrect sign usage into correct sentences.
(a) All gone shoe.	(a) Your shoe is all gone.
(b) Me find shoe.	(b) Oh, you found your shoe!
(c) I putted on shoe.	(c) You put on your shoe.

6. Child signs simple ideas.	Parent expands by adding new information.
(a) Mamma, Miss Foyer sick. No school. Miss Foyer home, cough, cough, Miss Foyer sick.	(a) Oh, your teacher's sick. Miss Foyer is home in bed. She feels bad. She coughs. You had a different teacher at school today. I'm sure she was a nice teacher.

As the parents learn more signs and begin to feel comfortable signing complete sentences, they will be in a better position to expand the signed sentences of their child. For example, if the child signs "Ball," the parent will want to expand the expression to a complete simple sentence, "Yes, that's a ball." Or if the child signs "Go, bye-bye," the parent may want to sign the simple sentence "Let's go bye-bye." However, until parents feel comfortable signing complete sentences, they should expand by using total communication telegrams. They should use whatever signs they know in their expansions. For example, if the child signs "dog" the parent can sign "Yes, big-dog." Or if the child signs "cookie," the parent can sign "You want-cookie?"

Using positive after events. Effective usage of after events does not require a great deal of time or preparation from the parent. Most of the after events suggested above may be given without interrupting the normal flow of work or home tasks which are going on. The important principle to remember is *immediate responsivenes* to the child's attempts and to place emphasis on how the after event is communicated (enthusiasm, etc.) rather than worrying about exactly what you sign. Only in the use of expansions do you need to think about what to sign and then only to generate a longer form of the message which the child was attempting to sign. Immediate response to the child's language attempts will provide the child with motivation to keep trying and to continue making and modifying his language attempts.

Practicing and remembering to be responsive. Some parents need help in learning how to be good users of after events. The key is to think about all the situations in which parent and child are together and figure out how to apply after events in those situations. Initially try a specific number of times (10) in each situation and then gradually expand. The more one practices, the more natural it will become. One way to remember to be responsive is to put reminders in various strategic locations throughout the home where the parent and child are frequently together. Notes stuck on the refrigerator, the kitchen cabinets, the back of the bathroom door, or the dressing table serve as cues to remind the parents about what they should be doing. The signs may read as follows:

BE RESPONSIVE

Tell Billy how
well he is signing.

BE ENTHUSIASTIC

Remember to
EXPAND

PRAISE BILLY

Are you praising
Billy's signing attempts?

The continual use of good after events can be helpful in the complex process of learning language. The use of natural home situations and naturally occurring after events helps to make this process easy and enjoyable for the child.

Review Questions For Parents

1. What is a positive after event? (see pages 601–602)
2. Give examples of 2 or 3 positive after events (see pages 603–604)
3. What is expansion? (see bottom of page 602, top of page 603; examples on pages 604 and 605)
4. How might you expand the following attempts by a child to sign?

(Whether the parent suggests total communication telegrams or complete sentence expansions will depend on the parent's signing abilities.)

Child signs: Expansion:
Hurt! ________________________________
Play out. ________________________________
Want some. ________________________________
Look, look, airplane. ________________________________
Please watch. ________________________________

Sample Challenges

1. Make three reminders to provide positive after events and place them in obvious places in your home.
2. This week, remember to expand what your child signs into two or three word phrases. Be ready to demonstrate your expansions at our next visit.

Lesson 7

Signing Consistently In The Home: Communicating Directly To The Child

Outline/Parent Objectives

I. Parents will understand the importance of consistently signing whenever they communicate directly to the child.

II. Parents will sign whenever they communicate directly to the child in four language areas.
  A. The first area is child care activities.
  B. The second area is parent task activities.
  C. The third area is child initiated activities.
  D. The fourth area is parent directed activities.

III. Parents will incorporate the principles of simplicity, emphasis, and reinforcement in their communication.

Materials

None

Lesson

Introduction. If the hearing impaired child is to develop normal language, he must be exposed to on-going total communication input in the home. Just as hearing children are constantly exposed to conversation directed to them and to the background conversation of others, hearing impaired children must be given the same exposure to total communication.

The next three lessons will teach family members how to use total communication consistently in the home. This lesson will discuss the importance of using total communication consistently in the home. Then steps in achieving consistent total communication use will be presented. The first of these steps, signing when talking directly to the child, will also be discussed in this lesson. The next lesson will cover the second step, signing during the home visit, and the following lesson will discuss the third step, signing background conversation.

Importance of signing consistently in the home. Toby is a 2-year-old deaf child. His father is profoundly deaf and his mother has a severe hearing loss. Both parents sign consistently to Toby in the home. Signing is their natural language. Toby is greeted by "Good morning," "Hi there," "Do you want up?" when he awakens. His mother signs to Toby as she dresses him. "Here's shoe." "Let's put on shoe." "Push, push." "Push on your shoe." Mother and Daddy sign to Toby and the other children as they put breakfast at the table. They talk about the day's activities, the weather, and perhaps how they feel.

Throughout the day, Mother signs to Toby about things she is doing and about things Toby is doing. As she cleans up the dishes, she signs, "Wow, a mess." "Look at all these dishes." Often she steps over to Toby and signs to him about what he is doing. "Oh, you found toy dog." "Poor old dog." "His tail's falling off." She always signs to Toby when she is caring for his needs such as toilet time, snack time, and undressing him for his nap. At the end of the day, Toby's dad, brothers, and sisters join in the communication again, and Toby is exposed to ideas about football, shopping, supper preparation, and television programs.

Just before bedtime, Dad plays with Toby. He signs all of his communication to his son. By the time Toby is ready to go to bed, he has received a day of intense, meaningful language stimulation. Toby feels communicatively and emotionally close to his family because they have provided consistent communication to him throughout the day.

Toby's language development is 2 months ahead of the normal language development of hearing children. He has an expressive vocabulary of about 200 words. He signs two-word phrases, asks, *what* questions, and refers to himself by the pronoun *me*. He understands family name categories (mother, father, sister), understands *same* and *different*, knows the difference between *mine* and *yours*, and understands a host of three-to-four-word phrases and sentences.

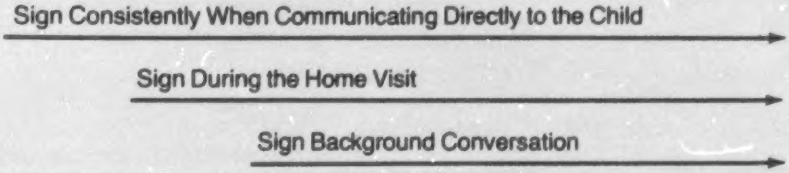
Deaf children of deaf parents, who sign consistently to their children, typically show this type of language growth. Many studies have been done comparing deaf children of hearing parents to deaf children of deaf parents in reading, speech reading, math, writing, vocabulary usage, and overall emotional achievement (Stuckless & Birch, 1966: Vernon & Koh, 1970; Meadow, 1968; Montgomery, 1966). In these studies, deaf children of deaf parents often score higher than deaf children of hearing parents. One important reason for the difference between the two groups is that deaf children of deaf parents typically receive consistent sign language input from birth while deaf children of hearing parents may not.

Consistent total communication input is necessary if the hearing impaired child is to experience normal emotional and language development. However, it is not an easy thing for hearing parents who have never signed in their lives (and perhaps have never seen anyone else sign), to sign consistently to the child. Their total communication vocabularies are small. It is easy to confuse and mix up signs. Parents are not accustomed to always moving their hands when they speak. They are afraid of making mistakes, afraid someone will criticize them. These concerns and fears are certainly understandable. Since consistent total communication is so important for the child's growth and well-being, the next three lessons will be devoted to helping parents improve their signing consistency. One word of caution: "Nothing in haste!" Parents must be conscientious but not hasty or frantic. Learning how to use total communication consistently takes time. As a matter of fact, the basis for the following lessons is *time*; gradually building upon the parents' skills until, over a period of time, consistent total communication is achieved.

Steps in achieving total communication consistency. After the family has acquired a basic conversational total communication vocabulary (typically 200-300 signs, or after several weeks of learning a basic vocabulary), the parent advisor can begin working with the family on signing consistency. There are three basic strategies that should be used.

1. Sign consistently when communicating directly to the child.
2. Sign consistently during the home visit.
3. Sign consistently when the child is present but the conversation is not directed to the child (sign background conversation).

These three strategies will not be done separately. They will be done in this time order:


Sign Consistently When Communicating Directly to the Child
Sign During the Home Visit
Sign Background Conversation

Parent advisors will probably want to spend several weeks on each strategy. However, the first strategy will be introduced in this lesson and the remaining two strategies will be introduced in the next two lessons.

Signing consistently when communicating directly to the child. Family members should use total communication *whenever* they communicate directly to the hearing impaired child. As mentioned earlier, family members do not need to worry about signing everything they say since they may not know some signs. However, when the child is addressed, *family members should sign all that they know.*

This skill of signing consistently when communicating directly to the child incorporates the principle of communication in four language areas. Parents learn to consistently use total communication when they address the child in these four language situations. The four language areas are: (a) child care activities, (b) parent task activities, (c) child initiated activities, and (d) parent directed activities.

Child care activities are activities the parents must do to take care of the child. Such things as dressing, undressing, feeding, and bathing are child care activities. These child care activities are very important times for language stimulation. These are the times when parent and child must communicate.

Parent task activities are the tasks that mom and dad must do everyday. The child participates in these activities. Such activities as doing the laundry, making the beds, yard work, and cooking are parent task activities. Parents have to do these regularly. The child will often want to participate in these activities. The parent should not feel that the parent advisor is trying to teach them or their child these tasks but showing and helping them to use these activities as maximum language learning situations. The child should not be forced into these situations but the parent should be able to make them meaningful language situations when the child wants to participate.

Child initiated activities are activities the child decides to do on his own. Often a child will be playing by himself in an activity he initiated himself. The child is obviously motivated and interested. These situations are some of the most important occasions for language learning in the child. The parent advisor should model for the parent how she can, when she sees the child in an activity, intervene with the child and make it a linguistically meaningful language experience.

Parent directed activities are games, stories, and other similar semi-structured activities. Some language skills can best be developed through these types of activities. The parent should learn to sit down and sign a story to the hearing impaired child or conduct a language game or creative activity such as coloring or cutting. The parent advisor can occasionally bring games, activities, and materials into the home to demonstrate these to the parents.

Teaching signing consistency in four language areas. In order to help parents sign consistently to the child in the four language areas, parents and parent advisor should select an activity in one of the four areas. For example, the parent task activity of picking up clothes may be selected. The parent advisor will teach the parents some selected clothing signs during the home visit or have the parents view a videotape on *clothing signs* during the week. At the subsequent home visit, the parent advisor will demonstrate how to use the selected clothing signs when communicating with the child about picking up clothes. Parents and parent advisor will want to remember to use the principles of *simplicity, emphasis,* and *reinforcement* in their communication. It is suggested that the parent advisor determine how frequently the parent uses the selected activity during the week. As a reminder to do so, parent advisors may want to leave the following chart for parents to complete and then check it at the next home visit.

Example of
LANGUAGE ACTIVITY CHART

Note: A blank form is available on page 613.

Week From ______________________ To ______________________

Activity: Picking up Clothes

Target Signs:

- pajamas
- shirt
- socks
- coat
- belt
- pants
- shoes
- pick-up
- clean
- dirty

Approximate Number of Times Activity Signed:

Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
					WEEK'S TOTAL:	

LANGUAGE ACTIVITY CHART

Week From ______________________ To ______________________

Activity: ______________________

Target Signs:

Approximate Number of Times Activity Signed:

Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
					WEEK'S TOTAL:	

At a subsequent home visit, a new activity in a different language area should be selected. The parent advisor should again teach the family selected signs or have the family view a videotape containing the signs and then model use of the selected signs. This process should continue until parents are communicating with the child in many activities in each of the four language areas.

Throughout these many weeks of signing daily activities to the child, all family members should receive this constant reminder: *Always sign whatever you know when talking directly to the child.* Homemade signs and notes can be left on refrigerator doors or in other obvious places to remind the family to:

SIGN TO SAMMY!

SIGN TO PAM!

TALK TO CINDY
WITH YOUR HANDS!

MATT NEEDS MORE LANGUAGE
THAN THE REST OF US DO —
SIGN!!! ALL THE TIME!

WHATEVER SIGNS YOU KNOW,
SIGN THEM TO SUZIE!

Review Questions For Parents

1. Why is it important for your hearing impaired child to have other family members sign consistently in the home? (see pages 607 and 608)

2. What are some examples of activities in the four language areas in which you can sign directly to your child? (Have parents give some examples.)

Child care activities: ______________________________

Parent task activities: ______________________________

Child initiated activities: ______________________________

Parent directed activities: ______________________________

Sample Challenges

1. During this week, sign to your child in the child care activity of getting your child dressed. *Use all signs that you know.*

2. Using the language activity chart, record how often you conduct *the table setting* activity this week. Make sure to sign to your child whenever you conduct this activity. Use the target signs: table, plate, glass, knife, fork, and spoon.

Lesson 8

Signing Consistently In The Home: Signing The Home Visit

Outline/Parent Objectives

I. Parents will understand the importance of signing with the parent advisor during the home visit.

II. Parents and parent advisor will sign consistently during the home visit.
   A. The activity portion of the home visit will first be signed.
   B. The discussion of the activities will next be signed.
   C. Finally, the business session of the home visit will be signed so that all communication during the entire home visit will be signed.

Materials

None

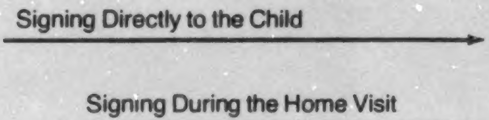
Lesson

Introduction. As was discussed during the last lesson, there are three important things family members need to do to achieve consistent use of total communication in the home.

1. Sign consistently when communicating directly to the child.
2. Sign consistently during the home visit.
3. Sign background conversation consistently.

The last lesson discussed the first step in achieving total communication consistency. This lesson will introduce the second step, signing consistently during the home visit. The last step will be introduced in the next lesson.

Signing consistently during the home visit. The second major goal in learning to use total communication consistently in the home is for the parents and parent advisor to sign all communication during the entire home visit. This will take time but is an important step in developing ease and consistency in total communication use. This step should begin after parents have begun working on signing consistently when talking directly to the child as shown graphically below:



An important thing to remember is to relax, take time, be patient, and enjoy learning to sign during the home visit. A lot of mistakes will be made but that is not serious. Concentrate on enjoying small increases of *signing time* during successive home visits. Of course parents and parent advisors should talk as they sign and should sign all words they know. If certain signs are not known, these words will be spoken only. Parents and professionals can then help each other learn the unknown signs. They may want to have a signing book handy to look up unknown signs. It does not matter how slow the signing is. Speed will come with experience. *The important thing is to sign all known words.*

The parent and parent advisor may want to follow this format:

1. To begin with, sign the activity section of the home visit; that is, parent advisor demonstrates the activity using total communication and then the parent does the activity in total communication. The activities should be kept simple and short in the beginning.

2. Increase the length of the signed activity. Perhaps 1 or 2 minutes will be long enough at the outset. Increase the length of the signed activity to 10 to 15 minutes over the course of a few weeks.

3. Begin signing the discussion and challenges following the activity. The parent advisor may sign questions such as: "Can you think of some times and places that you could do this activity during the week?" or "How many times would you like to try to do this activity during the week?" or "How did you feel when you did the activity?" or "What would be a good way to involve Tammy's sister in the activity this week?" After the challenges are written down, the parent can sign them back to the parent advisor to make sure they are clear. If the parent has any questions, they can be asked in sign.

4. The next thing that can be added is signing the description and discussion of the activity. The parent advisor will be primarily responsible for this. She will need to explain why the activity is done and how it will be done. Responses from the parent should also be signed.

5. The last thing to be added is the beginning *business session* portion of the home visit. Parent advisors will need to get information about child and parent progress during the week. The parent checklists will need to be discussed. Parents may want to describe specific incidents that happened during the week. The parent advisor will make announcements (parent group meeting, audiological test appointment) and will handle necessary business (making new mold impressions, fitting trial hearing aids). This preliminary business discussion should be signed by both parent advisor and parent.

By the end of many weeks of increased signing time during the home visit, parents and parent advisors will be signing throughout the entire home visit.

Note: Parent advisors who may need help in brushing up on their signing skills should see the section "Notes and Supplemental Information" on pages 621–622.

The following chart may assist parent advisors and parents to increase their signing times during home visits.

Portions of Home Visit Signed

Instructions: The chart should be marked at the end of each home visit. Put an X in the box of each level as it is achieved. When boxes have been checked in the categories of (1) activity, (2) discussion and challenges, (3) description, and (4) business session, during any one home visit, the basic home visit is being signed and the charting can be discontinued.

	(1.) Activity(s) 0-5 min.	Activity(s) 5-10 min.	Activity(s) 10-15 min.	Activity(s) 15-20 min.	(2.) Discussion of Activity and Challenges	(3.) Description of Activity(s)	(4.) Business Session
(date)							
(date							
(date)							
(date)							
(date)							
(date)							
(date)							
(date)							
(date)							

Review Questions For Parents

1. How will you and your parent advisor gradually learn to sign all of the home visit?

Sample Challenges

1. Be prepared at our next home visit to use total communication in our discussion of the activity.

2. Sign the activity of clearing the table during this week. Remember to use the new signs you learned today while doing this activity: napkin, butter, jar, pitcher, tablecloth.

Notes/Supplemental Information

Strategies for parent advisors to learn and improve total communication:

1. The beginning step for most professionals in learning signs is to view sign language videotapes or enroll in a sign language class. Sign language classes are frequently taught by local school districts, universities, vocational rehabilitation services, parent-infant programs, and schools for the deaf. Professionals should inquire thoroughly about what is available in their area. Most professionals find that one basic signing class is not enough. Several classes usually are necessary. These may be taken sporadically or in a series.

Sign language videotapes (such as those available from SKI*HI Institute) can be viewed on a playback unit in the professional's home. The parent advisor should learn a basic signing vocabulary *before* acquiring a total communication case. After picking up a total communication case, she can review appropriate taped lessons in preparation for her home visits. For example, a videotape lesson *mealtime* could be reviewed before conducting a home visit activity on lunch preparation. Or if a videotape is not available, the parent advisor would review a word list of signs that could be used in the home visit.

2. Professionals need total communication cases to assist in the development of their total communication skills. Professionals who take a class or two but never make themselves available for total communication cases will not learn signing skills very quickly. Of course the first few cases may be a bit awkward but if professionals are honest and indicate to families that they are beginning signers, a spirit of mutual assistance can be established. After the professional has worked with several total communication families and has used the strategies suggested, she will find her skills greatly improved.

3. Regular individual practice sessions and practice sessions with others are important for the professional. Parent advisors in the same geographic area may want to meet together regularly to practice fingerspelling and signing. In some programs, this is considered in-service training and the professionals are paid to attend the sessions. Despite the provision for group practice sessions, the parent advisors should engage in a lot of private practice: signing along with TV and radio commercials, signing in front of a mirror, fingerspelling road signs while riding in the car, and talking (signing) to oneself.

Some programs utilize videotapes of deaf adults signing. These tapes can be used in in-service training sessions to enhance the learner's ability to read signs. Programs may obtain these tapes from vocational rehabilitation services, schools for the deaf, universities, or state associations for the deaf.

4. Professionals will find that a most interesting and expeditious way of improving their signing skills is to become involved in deaf community activities. Interacting in sign with other deaf adults is perhaps the very best way to learn sign language. Some deaf community activities include: (a) showing of captioned films (film clubs, church groups sponsoring regular showings, school for the deaf movie nights); (b) church services for the deaf; (c) deaf sporting events (bowling, ping-pong, golf, volleyball tournaments, basketball); (d) state association for the deaf conventions; (e) theaters of silence; (f) school for the deaf activities; (g) events sponsored by state and local associations for the deaf; (h) deaf amateur (skit) nights.

5. One of the best ways for the professional to become a proficient signer is for her to teach others signs. Parent advisors can regularly teach their own children and spouses signs. Or they can volunteer to teach beginning sign language classes. Or as part of each in-service training session, parent advisors can rotate in teaching the other parent advisors new signs.

If a total communication child is attending a special unit in a public school or is mainstreamed for some of his classes in a public school, the parent advisor may want to teach a sign class or arrange for a sign class to be taught to interested hearing students.

6. The final strategy professionals can employ to improve signing skills is to interpret for deaf persons. To begin with, the parent advisor may want to volunteer to occasionally interpret for the deaf children in her caseload at such occasions as cub scout meetings or church meetings. As soon as family members are able to do this, they should assume these responsibilities rather than the parent advisor. Parent advisors may want to acquire interpreting skills by making themselves available to interpret for deaf individuals. This is a more comfortable situation than interpreting for groups of deaf persons which is considerably more threatening. To interpret for audiological evaluations, doctor appointments, or in social situations is excellent practice. In some states, parent advisors are paid to interpret for deaf parents of deaf children in activities sponsored by parent-infant programs (such as parent group meetings).

Lesson 9

Signing Consistently In The Home: Signing Background Conversation

Outline/Parent Objectives

I. Parents will understand the importance of using total communication consistently when the hearing impaired child is present even though the conversation is not necessarily directed to the child.

II. Parents will sign the background conversation of more and more daily activities until they are signing all the time in the presence of the child.

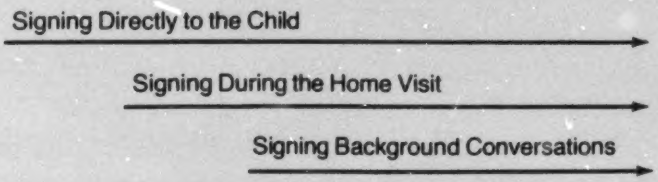
Materials

None

Lesson

Introduction. The three basic steps in using total communication consistently in the home are: (a) signing consistently when communicating directly to the child, (b) signing consistently during the home visit, and (c) signing background conversation consistently.

We have discussed the first two steps during the last two lessons. The last step, signing background conversation, will be discussed in this lesson. This is perhaps the most difficult of the three steps but it is *very important.* Remember that hearing children are exposed to many conversations throughout each day that are not directed to them. They learn a great deal about language from these conversations. The hearing impaired child is at a disadvantage because he is lacking in that one important channel for learning language—hearing. He needs more language input than the hearing child to make up for this deficit. It does not make sense to deny the hearing impaired child signed background conversation when he needs *more* language input than a hearing child. That is why this particular skill is so important even though it may be difficult and though it takes time and effort to achieve. This skill should begin after parents have begun working on signing consistently during the home visit.


Signing Directly to the Child
Signing During the Home Visit
Signing Background Conversations

These three skills continue until all have been achieved.

Signing background conversations. Before presenting a format for teaching this skill, we would like to point out some things to remember.

1. If the hearing impaired child is not present, it is not absolutely necessary to sign to others. However, family members will probably discover that signing to each other in the absence of the child is excellent practice and usually a lot of fun.

2. When private conversations are necessary and the child is present, signing should be discontinued. Hearing children would receive this same treatment. Adults would lower their voices or go to another room.

3. In families where there are other young children, parents will benefit from always signing their simple conversations to these children. The simplicity of these conversations makes them ideal times to practice signing. It encourages the young siblings to learn total communication and use it. Most importantly, it enables the hearing impaired child to feel part of a signing environment and to be exposed to simple conversational signing on a continuing basis.

4. If family members are "beginners" and find signing background conversations difficult, they should concentrate on signing during the times when the child is really looking at them. Family members will want to constantly remind themselves and each other to be aware of times when the child is looking at them and sign during those times.

The following is a suggested format which will assist family members to sign as they talk in the presence of the child, even though the conversation may not be directed to the child.

1. To begin with, parents and parent advisor should decide on a time unit during each day to work on. Following are some examples of time units.

1. Getting child up, dressing child	2. Feeding Child	3. Sending or taking child to morning school or other special programs
4. Morning play/ work activities	5. Morning nap time	6. Lunch activities
7. Afternoon school or special programs	8. Afternoon play/ work activities	9. Afternoon nap
10. Other children coming home from school	11. Suppertime	12. Before-bed activities, getting child dressed for bed, storytime, prayers, playing with child

The parent and parent advisor should outline the family's typical daily time units. The number of units will vary from family to family. One unit should then be selected on which to begin working.

2. The goal during the week will be for the parents to sign consistently during one time unit even though not signing directly to the child. The parent will need to remember only one time unit and will sign every word they know despite who is being addressed. After a time unit has been selected, the parent advisor will demonstrate how to sign the unit. For example, if *playtime* is selected, the parent advisor will sign while talking to the child, the siblings, the parent or to

friends of the child during the activity. Then the parent will do the activity. The challenge for the week will be for the parents to sign as much as they can during that time unit every day of the week.

3. At the next session, select a new time unit. The parent advisor will demonstrate the activity and then the parent will do the activity. The challenge for the week will be for the parents to sign to all persons being addressed during the new time unit.

4. This procedure will be continued until all time units have been covered. Parents should then feel comfortable signing consistently during all typical daily time units with anyone who is present. Families may want to use a chart to help keep track of the time units they have worked on and which one is currently being worked on. An example of a chart is on page 626. A blank form is on page 629.

5. Some families may wish to add an additional step. After they have practiced signing all time units, they may want to combine time units in a cumulative fashion.

For example, the Martin family might sign two time units in one week: breakfast and lunchtime. During the next week they could add another time unit: breakfast, lunchtime and supper. During the third week they would add another unit: breakfast, lunchtime, supper, and playtime with siblings. At the end of several weeks, all time units would be signed daily.

Family members may want to use a chart to record their cumulative signing. An example of this chart used by the Martin family in on page 627. A blank form is on page 631.

Review Questions For Parents

1. Why is it important for the hearing impaired child to be exposed to signed background conversation? (see page 623)

2. Describe how you and other family members will gradually learn to sign consistently when the hearing impaired child is present but when the conversation is not necessarily directed to the child.

Sample Challenges

1. During this week, use all the signs you know to everyone you communicate with during the activities of *getting up and breakfast.* Use the form TIMES TO SIGN.

(The Martin family)

Example of:

TIMES TO SIGN

(Sign *all* you can to *everyone* you talk to)

Note: Blank form is on page 629.

1. Get-up time ✓	2. Bath time ✓	3. Breakfast ✓	4. Morning playtime
5. Nap	6. Lunch ✓	7. Afternoon	8. Supper ✓
9. Playtime with siblings	10. Getting dressed for bed	11. Bottle time	

		Unit To Be Worked On:
week of:	Aug. 3-9	Get-up time
week of:	Aug. 10-16	Bath time
week of:	Aug. 17-23	Breakfast
week of:	Aug. 24-30	Lunchtime
week of:	Aug. 31-Sep. 6	Suppertime
week of:		
week of:		
week of:		
week of:		
week of:		
week of:		
week of:		

(The Martin Family)

Example of:

TIMES TO SIGN
(Cumulative Signing)

Note: Blank form is on page 631.

Date Unit Added:	Sign These Times: (Sign *all* you can to *everyone* you talk to)
9/26	Get-up time
10/3	Bath time
10/10	Breakfast
10/17	Morning playtime
10/24	Nap time

TIMES TO SIGN

(Sign *all* you can to *everyone* you talk to)

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

UNIT TO BE WORKED ON:

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

week of: ____________ ____________________

TIMES TO SIGN
(Cumulative Signing)

Date Unit Added:	Sign These Times: (Sign *all* you can to *everyone* you talk to)

538

Lesson 10

Using Effective Total Communication In The Home

Outline/Parent Objectives

I. In order to make total communication effective, parents will use animation.
  A. They will use interesting facial and body expressions.
  B. They will exaggerate certain signs.

II. Parents will use speech effectively in total communication.
  A. They will always use their voices.
  B. They will speak clearly, avoiding over-articulation and synchronizing hand motions to word syllables when possible.

III. Parents will use affixes and non-content words in their total communication.

IV. Parents will get the child to watch them sign.
  A. They will get down on the child's level.
  B. They will use interesting facial and body expressions.
  C. They will not demand visual attentiveness on the part of the child.
  D. They will allow the child to initiate signed conversation.
  E. They will allow the child freedom to tune in and out of signed background conversation.

V. Parents will correct the child's signing mistakes only if the child obviously needs help.
  A. They will realize over-correction inhibits child signing.
  B. When appropriate, they will gently use shaping to help the child make signs.

VI. Parents will know how to communicate even if their hands are full.
  A. If possible, they will free their hands and use two-handed signing.
  B. If two-handed signing is not possible, they will use one-handed signing (using their predominant hand).
  C. If one-handed signing is not possible, they will establish eye contact with the child and clearly enunciate the message.

VII. Parents will encourage reluctant family members to use total communication by doing such things as not forcing them to sign, involving them in enjoyable family sign activities and games, and teaching the peers of reluctant family members how to sign and fingerspell.

VIII. Parents will involve relatives and friends in total communication by doing such things as inviting them to view video lessons, involving them in informal signed conversation, and giving them signing books or games as gifts.

Materials

None

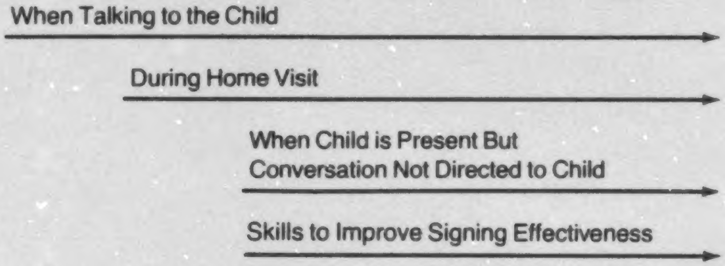
Lesson

Introduction. This lesson will provide suggestions for making total communication as effective as possible in the home. SKI*HI Institute conducted a survey of parents in 11 states who were using total communication with their children 0-5 years of age. The parents were asked what problems and frustrations they had in using total communication around their children. The following eight concerns emerged as the most pressing issues: (a) using animation, (b) using speech effectively in total communication, (c) using affixes and connective words, (d) getting the child to watch you sign, (e) correcting the child's signing mistakes, (f) signing when your hands are full, (g) getting reluctant family members to sign, (h) involving relatives and friends in total communication. This lesson will offer suggestions for dealing with these problem areas.

As discussed earlier in the section, "General Teaching Strategies," some parents may not be having problems with some of these issues. If so, the issues can be mentioned and parents praised for doing well on them. It is up to the parent advisor to decide how many lessons should be devoted to the issues on which parents need help. For some parents, one or two lessons may be adequate for *all* the issues. For other parents, one or two lessons might be required for *each* issue.

The parent advisor should model the skills involved and then have the parents perform. These skills can be presented while family members are still working on achieving signing consistency in the home as shown by this schematic.

SIGNING CONSISTENTLY:


When Talking to the Child
During Home Visit
When Child is Present But Conversation Not Directed to Child
Skills to Improve Signing Effectiveness

Suggestions for improving effectiveness of total communication. The following suggestions will enable family members to use total communication effectively and enjoyably in the home.

1. **Using animation.** Let the face and body really communicate. Remember that total communication means *total* communication. Parents should feel free to use facial and body expressions along with their speech and signs.

Studies of body movements and facial expressions reveal that they are the primary communicators of human feelings. Since the hearing impaired child relies heavily on body language and facial animation to learn meanings (particularly emotional meanings), parents should remember to use body and facial animation when using total communication.

An important part of animation in total communication is exaggerating certain signs with accompanying facial and body expressions. For example, if one is signing "What a big house!" the sign *big* can be made very large. The eyes and mouth can widen to add a definite impression of *bigness*. Or if someone signs "I was shocked!" the signer can drop open his or her mouth and widen his or her eyes. These cues will enhance meaning and facilitate faster learning for the hearing impaired child.

2. **Using speech effectively in total communication.** As discussed in lesson 2, parents should *always use their voices when they sign*. These supplemental speech clues will facilitate the child's development of speech and language. If parents occasionally forget to use their voices, parent advisors may need to provide periodic, gentle voice reminders. For parents who frequently forget to use their voices, the parent advisor may want to chart the number of sentences signed in a particular activity and the percent of those sentences signed with voice. Parent advisors would then challenge parents to conduct the activity again, increasing the percent of signed *and* spoken sentences.

Parents need to speak clearly while signing. They need not over- articulate, but precision in speaking will help the child identify the words. If possible, parents should make the syllables of their words conform to the movement of the sign.

3. **Using affixes and non-content words in total communication.**

Affixes: The English language is full of affixes (additions onto words). Some affixes are prefixes (come before the content word) such as *pre, un, dis,* and *in*. Some affixes are suffixes (come after the content word) such as *ing, ed, ly,* and *tion*.

There is evidence from studies of spoken language acquisition that children learn to express word meanings more quickly if affixes are used. Hearing impaired children will learn affixes easily if: (a) they have proper amplification to help them hear the affixes, (b) they are constantly exposed to the affixes in sign and, (c) the affixes are signed clearly (they are easy for the child to see) (Schlesinger, 1978).

The following suggestions will enable family members to use affixes in total communication.

(1.) Family members who are learning to sign should not try to sign all affixes. It will frustrate the signer and confuse the child. Family members should at first concentrate on using simple functional words (content words) rather than compound or complex words that contain affixes. For examples, *enjoy* would be used before *enjoyment*, *kind* before *kindness*, *quick* before *quickly*.

When family members feel comfortable using basic signs in *total communication telegrams* (see lesson 4), they should begin to emphasize suffixes (word endings). Suffixes provide more meaning initially than prefixes for children. Hearing children use the endings *ing* and *ed* before other affixes. They learn the *ing* ending early because *ing* refers to a process named by the verb (such as running) that is in progress at the time and is therefore obvious.

The *ing* ending is probably the best affix to emphasize initially. It should be used consistently with action verbs requiring this ending. Parents will then want to use plural endings (es, s), and past tense endings (ed, d, t). in their total communication. All word endings should be signed clearly so the child can easily perceive them.

(2.) Family members will want to add more word endings as soon as possible. Parents will want to use such suffixes as:

able
age
ant
ate
d
dom
e
ee
en
ed
ance
ence
er
ar
or
ese
ess
est
ible
ic
ice
ify
il
im
ir
in
ile
ine
ion
tion
sion
ish
ism
ist
ite
ity
icity
ive
ize
ly
ment
neath
ness
ous
t
th
ure
y

(3.) Finally, parents will want to incorporate prefixes into their signing. Some prefixes to be used are:

anti
ante
dis
inter
intra
pre
pro
re
sub
un
yester

Note: Books containing good descriptions of signed affixes include *Signing Exact English,* Gerilee Gustason, et al.; *A Basic Course in Manual Communication,* Terrance J. O'Rourke; and *San Juan Visual English System,* San Juan Unified School District.

Non-content words: Historically, many deaf individuals have had difficulty using the little connector words of language (such as a, an, the, and, but, if, am, be, for, etc.). These non-content words comprise a large percentage of the words in the English language. Many parents notice their hearing impaired children skipping over these *little words* in their signing or later on in their reading. One reason for this may be the children's scanty exposure to these non-content words as a result of their parents skipping over them in their own signing.

Parent advisors should teach connector and other non-content words to parents as soon as they have a small, basic vocabulary. The following list gives some connector words in order of increasing difficulty (extracted from Dolch, 1945).

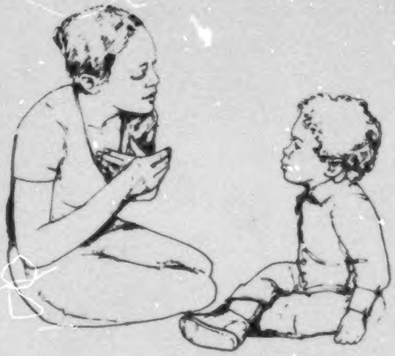
Connector Words

to
a
the
into
and
for
is
be
not
at
so
by
do
are
on
that
did
had
an
this
was
just
if
soon
it
some
from
then
but
as
will
am
of
or
with
has
any
those
shall

Initially, parents will want to use *total communication telegrams* while they are learning signs. But as soon as they have a basic vocabulary, more and more non-content words should be added until the parents are signing complete sentences. The parent advisor should model the use of connector words in complete sentences during the home visits. The parent and parent advisor should select specific situations during which the parents will practice using these words in context in the home.

4. **Getting the child to watch you sign.** Establishing good eye contact with the child while signing is of utmost importance. However, a common complaint of parents of hearing impaired children is that the children do not look at the parent's face or signs, or they turn their heads away before the parents are finished signing. There are some important things to consider in trying to remedy this problem.

First of all, children who learn to look at the face of the signer, rather than looking at the hands of the signer will be looking where most of the action is. Siple (1978) has shown that signs that are formed near the face and upper chest are smaller and have more detail than signs formed outside of this area. Signs formed outside of the face-upper chest region are larger, more repetitive, and easier to distinguish from each other. Therefore, if children learn to focus on the face region, they will be getting most of the signing activity and will be able to perceive the larger, easier outside signs in their peripheral vision. In addition, important lip clues are available if the child looks at the signer's face. Parents should never insist that children watch their hands. Rather, emphasis should be placed on attending to the speaker's face.



Secondly, children will be more likely to look at the signer and maintain eye contact if the signer does two important things: (a) *Get down on the child's level.* If parents squat or otherwise position themselves on the level of the child, the child will be more likely to attend than if the child has to constantly look up at the signer. (b) *Use interesting facial expressions and body language.* The attention of the child will be maintained if he has something interesting to look at instead of expressionless, deadpan countenances. (See no. 1 in this lesson.) *This item cannot be overemphasized.* Just as hearing children require interesting intonation and animation in adult talk before they will attend to it, hearing impaired children need facial and body animation in total communication to get and maintain their attention.

Thirdly, parents and teachers often over-demand visual attentiveness on the part of the child. They may grab the child's chin and turn it towards them when they want to sign something or they may become angry and sign "Pay attention!" or "Look at me." The child senses this frustration on the part of the adult and refuses to look. It is interesting that the many studies done on demanding, anxious parents indicate that when children sense demands and frustration, they tend to back off and refuse to do what is being demanded. The more parents demand attention, the more children look away. As a result, communication levels are lower and aggression levels are higher in the children. In addition, if hearing impaired children feel that whenever they look at their parents, that the parents are signing something to direct or punish them ("be quiet," "stop that," "bad girl," "sit down"), the children will look away frequently. If instead parents frequently use positive, accepting signs ("pretty girl," "I love you," "good boy"), children will look at parents much more frequently and much longer.

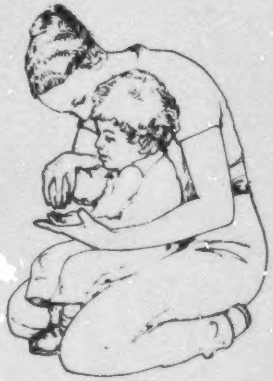
A fourth consideration is that parents may not realize the importance of allowing the child to begin the conversation. Many parents insist on starting most of the conversations. They demand that the child look at them and then proceed to sign. Very young children start as high as 50 percent of parent-child conversations. The child most frequently does this by simple glancing at the parents. Parents who are sensitive to these glances and then start signing back to the child will get more attention from the child than if they insist on getting the child's attention first and then signing to him.

A fifth consideration is this: A hearing impaired child often does not have the opportunity to develop a sense of *selectivity* in tuning into and out of background conversation. He does not develop a concept of *conversational turns.* Hearing children can tune *into* and *out of* background conversations depending on their interest at the moment. They also develop a concept of *conversational turns* as they willingly take turns in family conversations. The hearing impaired child may not get this same opportunity because background conversation is typically not signed. The child does not sense the freedom to tune into signed background conversation that may be of interest. The child feels that whenever someone signs, he *must* attend, he *must* look. The child does not feel a part of the free-flow of conversation in the home where some of the conversation is for him and some is not. In time, the child may begin to resent always having to attend whenever someone signs rather than feeling part of a conversational environment where he willingly takes a conversational turn or he voluntarily tunes into the conversations of others. That is why signing background conversation in the home is so important. (See Lesson 9.) When this is done, the child's voluntary attending will greatly improve.

Finally, if a child simply does not look at the parents, more specific steps may be necessary. The parent should gently place his or her hands on either side of the child's head and move it so the child's eyes meet the parent's eyes. The parent may want to introduce the signs *look* or *look at me.* If eye contact is established, the child should be rewarded warmly with a loving smile and the comment *good looking.* If the child avoids the parent's eyes, the parent should persist in signing *look at me* until the child responds and then reward warmly.

5. **Correcting the child's signing mistakes.** Perfect signs cannot be expected from children. In the beginning, imperfect signs can be compared to baby talk. If approximations are readable in any way, parents should accept them and respond to them. Gross approximations will have to be accepted from children with visual or motor difficulties.

Parents may want to do some occasional shaping to help the child develop a readable vocabulary. Shaping means to physically assist the child in making a correct hand forma-



tion. Deaf mothers use some shaping naturally with their deaf children (Bellugi & Klima, 1978). If the child is in the baby sign stage (trying to imitate adult hand motions but not making true signs), parents can occasionally assist the child to correctly form some signs. Or if the child is in the true sign stage, help may be necessary at times for the child's formation of new signs. The tendency for most parents is to *overshape*. If a child feels the parent is constantly correcting signs and shaping his hands for improved signs, the child will decrease his amount of signing. Some children simply refuse to sign if parents constantly correct them or demand that their signs be *made better* or *prettier*. Occasional shaping, however, may be appropriate.

The following things should be remembered when shaping:

(1.) The signs the child makes are 180° different from the signs made by others, if the child is facing another person. The child's own signs then, look quite different to him than the signs of others. This dilemma may account for the fact that young children frequently invert signs. The child may invert the direction of static signs (the hand may be pointed in the wrong direction) or reverse the direction and/or motion of active signs. If the child is reversing signs, the parent should realize this is a very natural occurence. In all probability the child will quickly self-correct. However, if this is not evident, the parent may want to sit next to the child rather than across from him. It may be necessary to gently take the child's hand and place it in the proper direction or make the motion in the correct way.

(2.) Discourage the child from adding extra movements to signs. The extraneous movements will be difficult to eliminate later. It is advisable to use shaping for correct hand formations rather than letting the extra motions become habitual parts of signs.

(3.) Use a gentle warm approach when shaping rather than a correcting, punishing approach. Immediately after shaping the sign, reinforce the child for his participation. "That's right!" "That's *apple!*"

(4.) Parents may want to occasionally ask the older hearing impaired child to help them make new signs. If the child has acquired new signs in pre-school or kindergarten, he will probably be delighted to help the parents form these new signs.

6. **Signing when hands are full.** Many signs are made with two hands. In some cases, both hands may be doing essentially the same thing such as in the signs *want, place, can, do, young,* and *enjoy*. In these signs, the position of one hand may be slightly different from the other or the motion of one hand may be reversed from the other but both hands are basically doing the same thing.

In other signs, the hands are doing different things. Some of these signs are: *chair, bread, hit, stand, tomato,* and *turtle*. The motion, handshape, and position of both hands are different.

Whenever possible, parents should use both hands for two-handed signing to make the signs as correct as possible. In fact, in all situations involving two-handed signing, obstacles should be removed so the signs can be correct.

For example, the mother may be sweeping and trying to sign *stand up* to her child at the same time. It would be advisable for her to prop the broom against herself for a few seconds and free her hands for the signs.

However, there are occasions when it is not possible or perhaps quite inconvenient to free both hands for two-handed signing. In such cases here are some suggestions:

(1.) For signs that are made by both hands doing basically the same thing *(want, cry)*, use only the free hand. Parents should be particularly aware of using facial and body clues to give additional meaning to these signs.

(2.) For signs that are made by both hands doing different things, (a) fingerspelling can be substituted for the two-handed sign or (b) the dominant hand (most important hand for the sign's meaning) can be used. For example, the right hand in the sign for *stand* or *fall* would be sufficient without the left hand to convey the meaning. Again facial and body expressions will be important additional clues.

(3.) If both hands are occupied and one or two-handed signing is impossible, the signer should establish eye contact with the child and enunciate clearly the word or words. Facial and *body language* clues will need to be used. The child will probably be able to understand the message.

(4.) If a person is right-handed and that hand is occupied, the signer may want to use the left hand, signing very slowly to ensure as much accuracy as possible with the awkward hand. Of course, just the reverse procedure would be used for a left-handed person. Family members may enjoy practicing signing and fingerspelling using both hands at the same time to enable them to use their weaker hand in emergencies. Two-hand signing and fingerspelling in front of a mirror is excellent practice.

7. **Getting reluctant family members to use total communication.** Some family members will pick up total communication quickly and use it frequently and others will not. It is not uncommon for some family members to resist learning and using total communication. Wise parents will never become insistent that reluctant family members sign. They will gently encourage them. They will warmly reinforce the reluctant signers when they do sign. They will remember that the best way to teach reluctant signers total communication is for the parents to sign consistently in the home.

If all family members learn to enjoy signing instead of feeling that they must sign to help the deaf sibling, they will offer less resistance. Most parents will find that if they use total communication consistently, gently encourage family members to sign, and use interesting activities to promote the learning and use of total communication, all family members will participate. However, the following are a few specific suggestions for family members who are very reluctant to use total communication.

(1.) For some children, interest in sign language can be sparked by having their own sign books or sign games. These books and games make excellent birthday and Christmas gifts. In addition, some children enjoy books about deafness and signing. See a representative listing of such books on pages 642–644. These books may kindle an interest in using total communication.

(2.) Older reluctant siblings may be encouraged to use total communication if some of their friends know a few signs and perhaps the manual alphabet. Children love secret codes. They delight in participating with friends in giving and sending secret messages. Parents (or the reluctant sibling) can teach fingerspelling and basic signs to peers in scout meetings, schools and youth church groups.

(3.) Participation by reluctant family members may be encouraged by friendly family competition or other activities (see lesson 4 for activity and game suggestions). A family *sign off* is a possibility. Each family member presents new signs he has learned during the week. The winner is the one who makes the most improvement over his prior score. For example, if Shaun learned 4 signs one week and 7 the next, he would win over Gail who learned 13 signs one week and 14 the next. (This accounts for age level differences.)

(4.) Some family members become enthused, proficient signers if they are given responsibilities such as: (a) interpreting for hearing impaired children in school, church, and community activities; (b) teaching or assisting in the teaching of hearing impaired children's groups (scouting groups, Sunday school, etc.); (c) teaching local sign language courses; (d) assisting or participating in deaf community activities (captioned movies, sporting events, skit nights, bazaars); and (e) interpreting for deaf adults (church meetings, PTA meetings, private consultations with professionals, social gatherings, etc.).

8. **Involving relatives and friends in total communication.** Several total communication families have taken an important extra step to include relatives and friends in the child's total communication environment. Although most relatives and friends will not become proficient in the use of total communication, if they know fingerspelling and some basic signs, the child's communication environment will expand and become much more meaningful. The following suggestions can be used to involve relatives and friends in learning and using total communication.

(1.) Sign instructional books are excellent gifts for grandparents, cousins, aunts, uncles, in-laws, and other relatives and friends. Select a book that is simple and well illustrated and one that includes the manual alphabet. A complete listing of sign instructional books is in the monograph "Materials List for Professionals and Parents of Young Hearing Impaired Children" and is available from SKI*HI Institute. Manual alphabet cards inserted in greeting, birthday, or Christmas cards are also good ideas.

(2.) Have parents invite persons directly involved with the hearing impaired child (Sunday school teachers, Bible study teachers, scout leaders, Campfire girls and Brownie leaders) to view sign language tapes in their home or attend classes with them. Or parents can arrange for a video playback machine to be placed in the person's home for convenient video viewing (contact SKI*HI Institute for information on home video equipment and tapes). Informal practice sessions can also be arranged. Even though these support people may only be able to sign some of their communication to the child, *some* communication will be much better than none at all.

(3.) Organize neighborhood sign classes. Neighborhood parents and children can gather at a designated time and place and learn simple signs such as *hi, ball, throw, come, play,* etc. These sessions can be conducted by the parent advisor or parents. Such sessions will enable the hearing impaired child to begin communicating with his neighbors.

(4.) An excellent way to teach relatives and friends signs is for family members to be willing to periodically introduce signs in the course of informal conversation. For example, while talking about a recent field trip the child took to a zoo, the parent could show the friend or relative how to sign some zoo animals. Or if the conversation is about politics or religion, signs related to these areas could be demonstrated.

Review Questions For Parents

1. How can you make your total communication more animated? (see pages 634 and 635)
2. How can you use speech effectively in your total communication? (see page 635)
3. What are affixes and non-content words and why is it important to sign them? (see pages 635–637)
4. What are some ways to get your hearing impaired child to watch you sign? (see pages 637 and 638)
5. If it is obvious that your child needs help in forming a sign, how can you help him? (see pages 638 and 639)
6. How can you communicate to your child even if your hands are full? (see pages 639 and 640)
7. How can reluctant family members be encouraged to use total communication? (see pages 640 and 641)
8. How can you involve relatives and friends in total communication use? (see page 641)

Sample Challenges

1. This week, be aware of using facial expressions with your total communication. Next week we will video tape you so you can see your expressions.
2. Remember to consistently use your voice this week with your total communication. Put up a reminder on your refrigerator: *USE VOICE*.
3. Sign the following affixes this week every time you use them in your communication: *ing, s*, and *ed*.
4. When you address your child this week, get down on his level. Do not demand his attention but if necessary, occasionally gently remind him to attend.
5. When your child needs help in forming a sign, gently help him make the sign. Reinforce him warmly after he makes the sign correctly.
6. This week, try one-handed signing (that we practiced during today's home visit) when your other hand is occupied. Next week, be prepared to show some one-handed signing for signs that were not practiced today.
7. Make arrangements to attend Jimmy's (reluctant family member's) class and teach his friends fingerspelling and a few fun, simple signs.
8. Invite your sister to your home to view the total communication video tapes.

Reference and Reading List:

Representative Books about Deafness and Total Communication for Family Members.

Lisa and Her Soundless World Edna Levine	NAD* (see address on page 644)
Words For a Deaf Daughter Paul West, 1970	SLS** (see address on page 644)
Ben's Quiet World F. Caccamise, C. Norris	NAD

I Have a Sister—My Sister is Deaf Jeanne W. Peterson, 1977	NAD
Robin Sees a Song Jim and Cheryl Pahz, 1977	NAD
In This Sign (Novel) Joanne Greenburg, 1970	NAD & SLS
Deaf Like Me (true story) T. Spradley, J. Spradley, 1978	NAD & SLS
I'm Deaf, Too (inspiring stories about deaf adults) F. Bowe, M. Sternberg, 1973	NAD & SLS
Our Beautiful, Beautiful Children	NAD & SLS
For Parents of Deaf Children Jerome Schein and Doris Naiman, 1977	NAD & SLS
Suggestions to Parents of Deaf Children McCay Vernon	NAD
The Girl Who Wouldn't Talk Cheryl and James Goldfedder, 1973	NAD
The Wild Boy of Aveyron (evolution of sign language)	NAD
Will Love Be Enough? J. and C. Pahz, 1977	NAD
The Palace and the Prince (novel) Virginia Scott, 1978	Vantage Publishing 34th St, NY, NY 10001
Total Communication (a philosophy) J. and C. Pahz	Charles C. Thomas 301-327 East Lawrence Ave. Springfield, IL
Island of Silence (novel) Carolyn B. Norris, 1976	NAD & SLS
Sound and Sign: Childhood Deafness and Mental Health K. Meadow and H. Schlesinger, 1972	NAD
They Grow in Silence Eugene Mindel, McCay Vernon, 1971	NAD & SLS
The Signs of Language (origin of American Sign Language) Bellugi and Klima, 1979	NAD & SLS
Selected Annotated Bibliography of Books, and Teaching Material on Sign Language	NAD

American Sign Language SLS
History, Structure, and Community
C. Baker, C. Padden, T. J. O'Rourke

*NAD: National Association of the Deaf
814 Thayer Avenue
Silver Spring, MD 20910
Telephone: (301) 587-6282

**SLS: Sign Language Store
8753 Shirley
P.O. Box 4440
Northridge, CA 91328
In California (213) 993-SIGN (TTY and Voice)
Outside California Dial Toll Free (800) 423-5413 (TTY and Voice)

Reference/Reading List For Parent Advisors

Bates, E., Benigni, L., Bretherton, I., Camaioni, L., and Volterra, V. (1977). From gesture to the first word: On cognitive and social prerequisites. In M. Lewis & L. Rosenblum (Eds.), *Interaction, conversation and the development of language*. New York: John Wiley and Sons.

Bellugi, U. and Klima, E. (1972). Roots of language in the sign talk of the deaf. *Psychology Today*, 6, 61-64.

Bellugi, U. and Klima, E. (1978). Structural properties of American sign language. In L. Liben (Ed.), *Deaf children: Developmental perspective*. New York: Academic Press.

Blanton, R. and Brooks, P. (1978). Some psycholinguistic aspects of sign language. In I. M. Schlesinger & L. Namir (Eds.), *Sign language of the deaf*. New York: Academic Press.

Bolton, B., Cull, J., and Hardy, R. (1974). Psychological adjustment to hearing loss and deafness. In R. Hardy & J. Cull (Eds), *Educational and psychosocial aspects of deafness*. Springfield, IL: Charles C. Thomas.

Bonvillian, J. D., Charrow, V. R., and Nelson, K. E. (1976). Languages and language-related skills in deaf and hearing children. *Sign Language Studies*, 12, 210-250.

Brown, R. (1970). Derivational complexity and order of acquisition in child speech. In R. Brown, *Psycholinguistics*. New York: Free Press.

Caccamise, F., Hatfield, N., and Brewer, L. (1978). Manual/simultaneous communication research: Results and implications. *American Annals of the Deaf*, 123, 803-823.

Collins-Ahlgren, M. (1975). Teaching English as a second language to young deaf children: A case study. *Journal of Speech and Hearing Disorders*, 39, 486-499.

Crandall, K. E. (1978). Inflectional morphemes in the manual English of young hearing impaired children and their mothers. *Journal of Speech and Hearing Research*, 21, 372-386.

De Villiers, J. G., and De Villiers, P. A. (1978). *Language acquisition*. Cambridge, MA: Harvard University Press.

Denton, D. M. (1971). A rationale for total communication. In T. J. O'Rourke (Ed.), Psycholinguistics and total communication: The state of the art, 1972. Compilation of the papers presented at Special Study Institute, Western Maryland College, June-July, 1971. Published by *American Annals of the Deaf*.

Dolch, F. (1945). *A manual for remedial reading*. Champaign, IL: Garrand Press.

Donaldson, M. and Wales, R. (1970). On the acquisition of some relational terms. In J. R. Hayes (Ed.), *Cognition and the development of language*. New York: John Wiley and Sons.

Duncan, S. and Fiske, D. W. (1977). *Face to face interaction—Research, methods, and theory*. Hillsdale, NJ: Lawrence Erlbaum Associate Publishers.

Fischer, S. (1974). The ontogenic development of language. In E. W. Straus (Ed.), *Language and language disturbances*. Pittsburg: Duquesne University Press.

Gaeth, J. (1967). Deafness in children. In M. Freeman & P. H. Ward (Eds.), *National symposium on deafness in childhood.* Nashville, TN: Vanderbilt University Press.

Gross, R. (1970). Language used by mothers of deaf children. *American Annals of the Deaf,* 115, 93-96.

Hirsch, Monroe, Ralph, and Wich. (1963). *Vision of children.* Philadelphia: Chilton Books.

Hoemann, H. W. (1978). *Communicating with deaf people.* Baltimore, MD: University Park Press.

Hoffmeister, R., Goodhart, W., and Dworski, S. (1978). Symbolic gestural behavior in deaf and hearing children. Paper presented at the American Speech and Hearing Association Conference, San Francisco.

Hoffmeister, R. and Wilbur, R. (1980). The acquistion of sign language. In H. Lane & F. Grosjean (Eds.), *Recent perspectives on American sign language.* Hillsdale, NJ: Lawrence Erlbaum.

Hollis, J. H. and Carrier, J. K. (1978). Intervention strategies for non-speech children. In R. L. Schiefelbusch (Ed.). *Language intervention strategies.* Baltimore, MD: University Park Press.

Hunt, J. and Uzgiris, I. (1966) *An instrument for assessory psychological development.* Champaign-Urbana, IL: University of Illinois.

Konstantareas, M. M., Oxman, J., and Webster, C. (1978). Iconicity: Effects on the acquisition of sign language by autistic and other severely dysfunctional children. In P. Siple (Ed.), *Understanding language through sign language research.* New York: Academic Press.

Kopchick, G. A., Rombach, D. W., and Similowitz, R. (1975). A total communication environment in an institution. *Mental Retardation,* 13, 22-23.

Lacy, R. (1972). *Development of Pola's questions.* Unpublished manuscript, Salk Institute for Biological Studies, La Jolla, CA.

Leonard, L. B. (1978). Cognitive factors in early linguistic development. In R. L. Schiefelbusch (Ed.) *Bases of language intervention.* Baltimore, MD: University Park Press.

Lewis, M. and Lee-Painter, S. (1974). An interactional approach to the mother-infant dyad. In Lewis & Rosenblum (Eds.), *The effect of the infant on its caregiver.* New York: John Wiley and Sons.

Maxwell, M. (1977). *A deaf child's invention of signs.* Unpublished manuscript, Salk Institute, San Diego, CA, and University of Arizona, Tucson, AZ.

Mayberry, R. (1976). If a chimp can learn sign language, surely my nonverbal client can too. *Journal of Speech and Hearing Disorders,* 18, 223-228.

McIntire, M. (1974). *A modified model for the description of language acquisition in a deaf child.* Unpublished master's thesis, California State University, Northridge.

Mehrabian, A. and Williams, M. (1971). Piagetian measures of cognitive development up to age two. *Journal of Psycholinguistic Research,* 1, 113-126.

Meadow, K. P. (1968). Early manual communication in relation to the deaf child's intellectual, social and communicative functioning. *American Annals of the Deaf,* 113, 29-41.

Mindel, E. D. and Vernon, M. (1971). *They grow in silence.* Silver Spring, MD: National Association of the Deaf.

Montgomery, G. W. (1966). Relationship of oral skills to manual communication in profoundly deaf students. *American Annals of the Deaf*, 3, 557-565.

Moorehead, D. M. and Johnson, M. (1972). Piaget's theory of intelligence applied to the assessment and treatment of linguistically deviant children. In *Papers and reports on child language development*. June, Issue 4, Institute of Childhood Aphasia, Stanford.

Palermo, D. S. (1974). Still more about the comprehension of less. *Developmental Psychology*, 10, 827-829.

Peoria Association for Retarded Citizens. (1978). *What's, why's and how's of total communication.* Peoria, IL: Communication Department.

Polzer, L. (1979). The acquisition of arbitrary and iconic signs: Imitation vs. comprehension. *Working papers in experimental speech-pathology and audiology*, Speech and Hearing Center. Department of Communication Arts and Sciences, Queens College of City University of New York.

Schlesinger, H. S. and Meadow, K. P. (1972). *Sound and sign: Childhood deafness and mental health*. Berkeley, CA: University of California Press.

Schlesinger, H. S. (1978). The acquisition of bimodal language. In I. M. Schlesinger & L. Namir (Eds.), *Sign language of the deaf*. New York: Academic Press.

Slobin, D. I. (1973). Cognitive prerequisites for the development of grammar. In C. A. Ferguson & D. I. Slobin (Eds.), *Studies of child language development*. New York: Holt.

Siple, P. (1978). Constraints for sign language from visual perception data. *Sign language studies.*

Stokoe, W. C. (1975). Face-to-face interaction: Signs to language. In Kendon, A., Harris, R. M. & Kay, M. R., (Eds.), *Organization of behavior in face to face interaction*. Paris: Mouton Publisher, The Hague.

Stuckless, E. L., and Birch, J. W. (1966). The influence of early manual communication on the linguistic development of deaf children. *American Annals of the Deaf*, 3, 452-462.

Tilker, H. (1975). Cognition from sensing to knowing. In *Developmental psychology today*. New York: Random House.

Tilker, H. The world of the newborn. In *Developmental psychology today*. New York: Random House.

Tomlinson-Keasey, C. and Kelly, R. (1974). The development of thought processes in deaf children. Published by *American Annals of the Deaf*, 119, 692-700.

Vernon, M. (1972). Non-linguistic aspects of sign language, human feelings and thought processes. In T. J. O'Rourke (Ed.), Psycholinguistics and total communication: The state of the art. *American Annals of the Deaf.*

Vernon, M. and Koh, S. D. (1970). Effects of early manual communication on achievement of deaf children. *American Annals of the Deaf*, 115, 527-536.

Wood, B. S. (1976). *Children and communication: Verbal and nonverbal language development.* Englewood Cliffs, NJ: Prentice Hall.